Genetic Diversity, Population Structure, and Formation of a Core Collection of 1197 *Citrullus* Accessions

Haiying Zhang, Jianguang Fan, Shaogui Guo, Yi Ren, Guoyi Gong, and Jie Zhang

Beijing Vegetable Research Center, National Engineering Research Center for Vegetables, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China; and Key Laboratory of Biology and Genetic Improvement of Horticultural Crops (North China), Ministry of Agriculture, Beijing Key Laboratory of Vegetable Germplasm Improvement, Beijing, 100097, People's Republic of China

Yiqun Weng

USDA-ARS Vegetable Crops Research Unit, Horticulture Department, University of Wisconsin, Madison, WI 53719

Angela Davis

HM.CLAUSE, 9241 Mace Boulevard, Davis, CA 95618

Yong Xu¹

Beijing Vegetable Research Center, National Engineering Research Center for Vegetables, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China; and Key Laboratory of Biology and Genetic Improvement of Horticultural Crops (North China), Ministry of Agriculture, Beijing Key Laboratory of Vegetable Germplasm Improvement, Beijing, 100097, People's Republic of China

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Abstract. Watermelon belongs to the genus *Citrullus*. There have been continuing interests in breeding of watermelon for economic benefits, but information on the scope and utilization of genetic variations in *Citrullus* is still limited. The present study was conducted in 2012–13, to evaluate the genetic diversity and population structure of the 1197 line watermelon collection maintained by the Beijing Vegetable Research Center (BVRC), which belongs to seven *Citrullus* species including *Citrullus naudinianus*, *Citrullus colocynthis*, *Citrullus rehmii*, *Citrullus ecirrhosus*, *Citrullus amarus*, *Citrullus mucosospermus*, and *Citrullus lanatus* subsp. *vulgaris*. Twenty-three highly informative microsatellite markers evenly distributed in the watermelon genome were used to assess genetic diversity in this collection. The markers detected on an average of 6.05 alleles per locus with the average value of polymorphism information content (PIC) at 0.49. A high level of gene diversity [Nei's gene diversity index (Nei) = 0.56] and a low observed heterozygosity (H_o = 0.10) were revealed within the collection. Structure analysis grouped the 1197 accessions into two main populations (Pop I and Pop II) and an admixture group. Pop I contained 450 accessions from *C. lanatus* subsp. *vulgaris* (446) and *C. mucosospermus* (4). Pop II comprised 465 accessions, 379 of which belonged to *C. lanatus* subsp. *vulgaris* and 86 to *C. naudinianus* (3), *C. ecirrhosus* (2), *C. rehmii* (2), *C. colocynthis* (11), *C. amarus* (58), and *C. mucosospermus* (10). The remaining 282 accessions were classified as an admixture group. The two main populations were further subdivided into four subgroups. The groupings were consistent with the estimation of F statistics (F_{st}) and Nei's genetic distances in collections. We confirmed the distinct genetic backgrounds between American and East Asian ecotypes. Subsequently, we defined a core set consisting of 130 accessions including 47 from Pop I, 68 from Pop II, and 15 from the Admixture group. This core set was able to capture all 133 alleles detected by 23 simple sequence repeats (SSRs) in 1197 accessions. These results will facilitate efficient use of genetic variations in *Citrullus* in watermelon breeding and help optimization of accessions in genomewide association studies.

Watermelon is a major vegetable crop throughout the world. It is an important source of income for small-scale farmers of China. There is an ongoing need to improve

watermelon, particularly for higher disease and pest resistances and yield. However, most breeding programs have relied on the use of established cultivars or elite breeding

lines, which resulted in lower genetic diversity within cultivated watermelon, impeding progress of watermelon breeding efforts (Levi et al., 2004). It has been shown that the narrow genetic base in watermelon can be averted with the use of wild materials (Levi et al., 2013). Since publicly accessible passport data on features and variations for the collections are limited (Munisse et al., 2013), it would take considerable time and effort to develop adapted, high-performing lines from crosses between elite and wild or exotic genotypes (Kottapalli et al., 2007). As such, commercial breeders are often reluctant to use the wild or exotic relatives directly to increase the genetic diversity of elite germplasm. Information on genetic differentiation and relationships of germplasm will be beneficial in efficient use of genetic resources.

Watermelon belongs to the genus *Citrullus*, but the taxonomic status of species, subspecies, and varieties in this genus is evolving. Previously, *Citrullus* included four species including *C. lanatus* (Thunb.) Matsum. Et Nakai, *C. colocynthis* (L.) Schrad., *C. ecirrhosus* Cogn., and *C. rehmii* de Winter. Cultivated watermelon belongs to *C. lanatus* (Jarret and Newman, 2000). Three subspecies of *C. lanatus* were recognized, including subsp. *vulgaris*, representing the common sweet watermelon group, subsp. *lanatus*, comprising the citron and "tsamma" types, and subsp. *mucosospermus*, encompassing the "egusi" seed watermelons. *C. lanatus* is also frequently divided into two botanical varieties: var. *lanatus* and var. *citroides* with the former including the sweet type (subsp. *vulgaris*) and seed type (subsp. *mucosospermus*) (Laghetti and Hammer, 2007). Recent molecular phylogenetic analysis found that the three subspecies of *C. lanatus* were in fact unrelated species (Chomicki and Renner, 2015). As such, it was proposed that the genus *Citrullus* should include seven species: 1) *C. lanatus* with the sweet watermelon group as *C. lanatus* subsp. *vulgaris*, 2) *C. amarus*, also known as *C. lanatus* var. *cafrorum* or *C. lanatus* var. *citroides*, 3) *C. mucosospermus*, the "egusi" melon, previously treated as a subspecies of *C. lanatus*, 4) *C. colocynthis*, which is perennial and growing in northern Africa and adjacent Asia, 5) *C. ecirrhosus*, a tendril-less South African endemic, another perennial wild species, 6) *C. rehmii*, an annual wild species, and 7) *C. naudinianus* from the Namib-Kalahari regions (Achigan-Dako et al., 2015; Chomicki and Renner 2015).

This new taxonomic classification likely improve the functionality of *Citrullus* genetic resources for watermelon breeding. Molecular characterization (Dane and Liu, 2006; Levi et al., 2013; Minsart et al., 2011) revealed a high level of genotypic diversity between *C. colocynthis* and *C. lanatus* subsp. *vulgaris* or *C. mucosospermus*, and low genetic differentiation within *C. lanatus* subsp. *vulgaris* as compared with *C. lanatus* var. *citroides* (*C. amarus*). Obviously, additional work is needed to investigate the phylogenetic relationships among *Citrullus*

and explore their potential in watermelon breeding (Chomicki and Renner, 2015; Levi et al., 2013; Mujaju et al., 2012; Nantoumé et al., 2013).

There are abundant collections of *Citrullus* germplasm deposited in various gene banks worldwide, which offer considerable opportunities for trait improvement in watermelon breeding. However, the large size, heterogeneous structure, and unavailability of information on trait diversity hamper the successful utilization of the genetic potential of these collections. At present, it is not realistic to characterize all available collections due to associated cost in labor, space, and time. Also, regeneration is a major problem, due to the numerous practical precautions required by the insect-mediated cross-pollination mating system of *Citrullus*. For the convenience of management, research, and application, Frankel and Brown proposed the concept of core collections (Frankel and Brown, 1984). A core collection is the maximum possible genetic diversity contained in the entire collection with a minimum of repetitiveness. To date, core collections have been established for many species, including tomato (*Solanum pimpinellifolium* L.) (Rao et al., 2012), cucumber (*Cucumis sativus* L.) (Lv et al., 2012), melon (*Cucumis melo* L.) (Hu et al., 2014), apple (*Malus domestica* Borkh.) (Liang et al., 2015), common wheat (*Triticum aestivum* L.) (Wingen et al., 2014), and peanut (*Arachis hypogaea* L.) (Upadhyaya et al., 2003). There is also a core set for watermelon (251 accessions) which was developed based on morphological descriptors and random selection by the USDA (<http://www.ars-grin.gov/cgi-bin/npgs/>), and the 84 watermelon from the USDA core collection were analyzed; however, a core collection under a genome-wide molecular characterization has not been performed.

The power of molecular markers in assessing the genetic diversity and helping the management of plant genetic resources (e.g., development of a core collection) has been well demonstrated (Kong et al., 2014). From a plant breeding perspective, molecular analysis can help to define the lineage relationships among genetic materials and to eliminate the phenomenon of homonyms as well as aiding identification of breeding lines carrying genes of interest (Hu et al., 2014). In watermelon, molecular markers have been used for fingerprinting, identifying and characterizing watermelon genotypes, and

examining population structure (Levi et al., 2013; Mujaju et al., 2010; Nantoumé et al., 2013; Nimmakayala et al., 2014; Zhang et al., 2012). Nevertheless, a broader understanding of the diversity and differentiation among and within *Citrullus* accessions is still lacking; also, there seems to be no information available on the overall genetic diversity and population structure of a wide spectrum of watermelon accessions.

The BVRC has maintained 1197 accessions representing seven species of *Citrullus* (*C. naudinianus*, *C. colocynthis*, *C. rehmii*, *C. ecirrhosus*, *C. amarus*, *C. mucospermus*, and *C. lanatus* subsp. *vulgaris*). From the watermelon draft genome sequences, we previously identified 23 SSR markers that are highly polymorphic and evenly distributed across the watermelon genome (Zhang et al., 2012). The objectives of the present study are to use these SSR markers to examine the genetic diversity and the population structure of the BVRC collection and to construct a core set from this collection with our long-term goal to explore the diversity in watermelon resources for modern watermelon breeding.

Materials and Methods

Plant material and DNA extraction. The present study was conducted in 2012–13. The 1197 watermelon accessions maintained by BVRC belong to seven species: *C. naudinianus* (3), *C. ecirrhosus* (2), *C. rehmii* (2), *C. colocynthis* (11), *C. amarus* (58), *C. mucospermus* (25), and *C. lanatus* subsp. *vulgaris* (1096). Details of these accessions used in this study are presented in Supplemental Table 1. Among them, 760 were introduced from the Southern Regional Plant Introduction Station in Griffin, GA, and the remaining 437 were diploid cultivars or inbred lines from different watermelon breeding programs and seed companies in China.

For each accession (10 plants were used for each accession), genomic DNA was extracted from 50 mg of young freeze-dried leaves following the hexadecyltrimethylammonium bromide (CTAB) protocol (Levi and Thomas, 1999); quantified with a Nanodrop™ ND-1000 spectrophotometer (Thermo Scientific, Wilmington, DE) and diluted to 10 ng/μL for subsequent use.

SSR analysis. The 23 highly polymorphic watermelon SSRs have been described in our previous study (Zhang et al., 2012), which were used for genotyping the 1197 watermelon accessions. Each 15 μL polymerase chain reaction (PCR) reaction mixture contained 20 ng template DNA, 4 μM each of the left and right primers, 2.5 mM MgCl₂, 2 mM each of deoxynucleotide triphosphates, and 0.5 U *Taq* DNA polymerase in 1× PCR buffer (Takara Company, China). The PCR reaction started with 94 °C for 5 min followed by 35 cycles of 94 °C for 20 s, 55 °C for 20 s, and 72 °C for 90 s with a final extension at 72 °C for 8 min. The PCR products were analyzed using 6% polyacrylamide gel electrophoresis in 1× Tris borate ethylenediaminetetraacetic acid buffer. The gel was stained with silver

staining using the SILVER SEQUENCE DNA Sequencing System (Promega, Madison, WI).

Genetic diversity assessment. Genetic parameters such as the major allele frequency, the average number of alleles and PIC were estimated using the PowerMarker v3.25 software (Liu and Muse, 2005). Shannon's information index (SW), H_o , expected heterozygosity (H_e), Nei and estimation of pairwise F_{st} among groups were calculated using the POPGENE v1.32 software (Yeh et al., 1997).

Population structure. A model-based Bayesian clustering method was applied to infer genetic structure and define the number of groups in the dataset using the software STRUCTURE v2.3 (Pritchard et al., 2000). To identify the putative number of groups (K), we ran an admixture and related frequency model from the value of $K = 1$ to 10 (five runs at each K). Each run comprised a burn-in length of 10,000 followed by 1,000,000 MCMC (Monte Carlo Markov Chain) replicates. The choice of most likely K value was performed by calculating the estimated log probability of data [$\ln P(D)$] and an ad-hoc statistic Δk based on the rate of change in $\ln P(D)$ between successive K values, as described by Evanno et al. (2005). Based on the maximum membership probability for each individual, all accessions were assigned to corresponding groups, as described by Remington et al. (2001).

Construction of a core collection. The advanced M strategy, based on a modified heuristic algorithm implemented in the PowerCore software by Kim et al. (2007), was used to develop the core set. In the software, genotype data at all loci were transformed automatically into a frequency table that covered the whole collection.

Results and Discussion

PIC of SSRs. All 23 SSR markers amplified clear, easily scoreable, and polymorphic bands in the 1197 accessions, confirming the usefulness of these markers in distinguishing different watermelon accessions. In addition, the band reproducibility and consistency for control genotypes (20 *Citrullus* genotypes with diverse genetic backgrounds and horticultural traits, which have been resequenced in the Xu's laboratory, BVRC (Guo et al., 2013) assured that the SSRs used were reliable genetic markers for *Citrullus* diversity analysis.

A total of 133 alleles were detected by the 23 SSRs ranging from 4 to 9 with an average of 6.05 alleles per marker locus. The PIC value ranged from 0.35 to 0.70, with an average of 0.49. Among the 23 markers, BVWS00433 exhibited the highest PIC value (0.70) and H value (0.74), whereas BVWS00314 had the lowest ($H = 0.38$; PIC = 0.35), which was the same as observed in our previous study (Zhang et al., 2012). In general, the PIC values indicate the allele diversity and frequency (Guo and Elston, 1999). The average PIC value of 0.49 for

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¹Corresponding author. E-mail: xuyong@nrcv.org.

Fig. 1. Optimal value of K for the full germplasm set of 1197 accessions. Fifty data sets were obtained by setting the number of possible clusters (K) from 1 to 10 with five replications each. The log probability of data [LnP(D)] value for each given K increased continuously, but did not show an abrupt change; the optimal K value could not be inferred (A). But after applying the Evanno's correction method (Evanno et al., 2005), there was a clear peak of ΔK at $K=2$, indicating two major populations (Pop I and Pop II) in this panel of collections (B).

Table 1. Taxonomic classification of 1197 *Citrullus* accessions assigned by the software STRUCTURE to populations (Pop I and Pop II) and subpopulations (Pop IA, Pop IB, Pop IIA, and Pop IIB), and number of accessions from each subpopulation selected into the core set and American core set.

Population	<i>Citrullus amarus</i>	<i>Citrullus colocynthis</i>	<i>Citrullus ecirrhosus</i>	<i>Citrullus lanatus</i> subsp. <i>vulgaris</i>	<i>Citrullus mucosospermus</i>	<i>Citrullus naudinianus</i>	<i>Citrullus rehmanii</i>	Total	Core set	American core set
Pop I	0	0	0	446	4	0	0	450	47	4
Pop IA	0	0	0	234	4	0	0	238	23	4
Pop IB	0	0	0	101	0	0	0	101	23	0
Pop I admixed	0	0	0	111	0	0	0	111	1	0
Pop II	58	11	2	379	10	3	2	465	68	42
Pop IIA	4	0	0	357	7	0	0	368	38	37
Pop IIB	51	9	2	4	0	3	2	71	26	4
Pop II admixed	3	2	0	18	3	0	0	26	4	1
Admixture group	0	0	0	271	11	0	0	282	15	38
Total	58	11	2	1,096	25	3	2	1,197	130	84

Fig. 2. Model-based cluster membership of 1197 *Citrullus* accessions in two main populations (Pop I and Pop II) and four subpopulations (Pop IA, Pop IB, Pop IIA, and Pop IIB). Pop IA was consisted of 238 accessions, a mix of American and East Asian ecotypes. Pop IB had 101 accessions, all from East Asian ecotype. Pop IIA was a typical American ecotype panel and contained 368 accessions. Pop IIB contained 71 accessions, which was a wild species mixed subgroup, with the accessions belonging to the six species.

23 markers from this study was comparable with the average PIC of 0.50 by Kwon et al. (2010) for 49 sweet commercial watermelon cultivars, a PIC value of 0.53 by Joobeur et al. (2006) with eight *C. lanatus* var. *lanatus* and four *C. lanatus* var. *citroides* accessions. Mujaju et al. (2011) reported that a very high PIC value of 0.92 from a study with 22 accessions from Southern Africa whereas a low PIC value of 0.35 was reported by Nantoumé et al. (2013) in 134 watermelon landrace accessions from Mali and the average PIC of 0.34 by Munisse et al. (2013) for 96 Mozambique accessions. Different PIC values could be attributed to the number of accessions included in the above studies, as well as the polymorphism of SSR markers used. In general, those studies showing low PIC estimates only included two cultivated species, *C. lanatus* subsp. *vulgaris* and *C. mucospermus*. Our results reported herein from seven *Citrullus* species may present the average of PIC values in this genus.

Genetic diversity and population structure in the BVRC *Citrullus* collection. Based on the data from 23 SSR markers on 1197 watermelon accessions, the Nei's gene diversity index ranged from 0.38 to 0.74 (mean = 0.56). Shannon's information index over the whole panel was relatively high (mean = 0.99). Compared with the H_e value across all accessions (mean = 0.56), the H_o value was relatively low (mean = 0.10) suggesting certain degree of inbreeding of these materials.

Using a model-based approach of STRUCTURE, the population structure of 1197 *Citrullus* accessions was analyzed. Fifty data sets were obtained by setting the number of possible clusters (K) from 1 to 10 with five replications each. The LnP(D) value for each given K increased continuously, but did not show an abrupt change; the optimal K value could not be inferred (Fig. 1A). But after applying the Evanno's correction method (Evanno et al., 2005), there was a clear peak of ΔK at $K = 2$, indicating two major populations (Pop I and Pop II) in this panel of collections (Fig. 1B). Pop I contained

450 accessions, which predominantly belonged to *C. lanatus* subsp. *vulgaris* (446) and a few (4) belonged to *C. mucospermus*. Pop II comprised 465 accessions, 379 belonged to *C. lanatus* subsp. *vulgaris*, and the rest 86 accessions belonged to *C. naudinianus* (3), *C. ecirrhosus* (2), *C. rehmi* (2), *C. colocynthis* (11), *C. amarus* (58), and *C. mucospermus* (10). The remaining 282 accessions had membership probabilities lower than 0.75 in any group and were classified into an admixture group, which belonged to *C. lanatus* subsp. *vulgaris* (271) and *C. mucospermus* (11) (Table 1; Supplemental Table 1). The two main populations, Pop I and Pop II, could be further subdivided into four subgroups. The ΔK values suggested $K = 2$ to both Pop I and Pop II. Pop I was divided into two subgroups: Pop IA and Pop IB. Pop IA was consisted of 238 accessions, a mix of American and East Asian ecotypes from *C. lanatus* subsp. *vulgaris*. Pop IB had 101 accessions, all from *C. lanatus* subsp. *vulgaris* East Asian ecotype. Pop I admixture included 111 accessions of *C. lanatus* subsp. *vulgaris* with membership probabilities less than 0.75 in any of the two groups. Pop II was also classified into two subgroups. Pop IIA was a typical *C. lanatus* subsp. *vulgaris* American ecotype panel and contained 368 accessions, of which 357 were of *C. lanatus* subsp. *vulgaris*, 7 of *C. mucospermus*, and 4 of *C. amarus*. Pop IIB contained 71 accessions, which was a wild species mixed subgroup, with the accessions belonging to the six species, involving *C. naudinianus* (3), *C. ecirrhosus* (2), *C. rehmi* (2), *C. colocynthis* (9), *C. amarus* (51), *C. lanatus* subsp. *vulgaris* (4). Pop II admixture group was consisted 26 accessions, which were from *C. lanatus* subsp. *vulgaris* (18), *C. colocynthis* (2), *C. amarus* (3), and *C. mucospermus* (3) (Table 1; Fig. 2). Accessions in the admixture group may have partial ancestry in more than one background. They probably had a complex history involving intercrossing or perhaps resulting from the gene flow between taxa.

Overall, the population structure analysis identified two main populations and four subpopulations. Comparing Pop I and Pop II, molecular variance analysis revealed that only 14.0% of the total genetic variation was partitioned among groups, 70.0% within groups and 16.0% within accessions. Analysis with subgroups revealed that 24.0% of the variations occurred between subgroups and 60.0% within subgroups suggesting relatively moderate differentiation among subgroups.

The pairwise F_{st} values can reveal genetic distance populations (Table 2). It ranged from 0.074 between Pop IA (American and East Asian ecotype mixed) and Pop IIA (American ecotype) to 0.341 between Pop IB (East Asian ecotype) and Pop IIB (wild species mixed), suggesting that Pop IB and Pop IIB groups had the highest degree of differentiations, which was supported with genetic diversity estimates (Table 3). When compared with other subgroups, Pop IIB exhibited the highest average alleles per locus (5.64), H (0.56), and H_o (0.20) indicating highest genetic diversity within this subgroup. In contrast, Pop IB exhibited the least diversity in terms of average alleles per locus (2.50), H (0.30), and H_o (0.03). Since all accessions in Pop IB were cultivated species, this result clearly showed the high degree of genetic differentiation between wild and cultivated *Citrullus* species, which is in agreement with previous findings (Jarret et al., 1997; Joobeur et al., 2006; Levi et al., 2013; Mujaju et al., 2010).

It was interesting to note the distinct genetic backgrounds between American and East Asian ecotypes. The genetic parameters such as gene diversity, PIC, and heterozygosity were lowest in East Asian ecotypes (Pop IB), were higher in American and East Asian ecotypes mixed (Pop IA), and highest in American ecotypes (Pop IIA). However, this observation was inconsistent from results obtained by Nimmakayala et al. (2014) who placed these two ecotypes into a single group. The discrepancy may be due to the difference in sampling sizes used by the two studies. In our diversity panel, over 300 accessions were from China and the United States (Supplemental Table 1) including several intermediate types between East Asian types and American types, whereas Nimmakayala et al. (2014) used 130 cultivated forms of watermelon.

Among the three ecotypes of East Asian, American, American and East Asian ecotype mixed, the East Asian ecotype showed the narrowest genetic base. One explanation for this is the breeding effect. More breeding programs in China focus on limited watermelon varieties as breeding parents, such as 'Charleston Gray', 'Jubilee', 'Crimson Sweet', 'Sugar Baby', 'Sugarlee' etc., which caused the narrow genetic base.

Further clustering analysis of the 71 accessions in Pop IIB resulted in a multi-branched dendrogram (Fig. 3). It displayed three major clusters that represented the *C. naudinianus* group (black group, CXG, PI618817, and PI 671961), the *C. colocynthis* group (green color) that also included the two *C. rehmi* accessions (Grif 16376 and PI632755, in pink color), *C. amarus* group (yellow color) including two accessions of *C. ecirrhosus* (PI632751 and Grif 16945, in blue color) and four accessions of *C. lanatus* subsp. *vulgaris* (PI 482288, PI505586, Seychelles and Colorado Preserving, in purple color) (Supplemental Table 1). From the dendrogram, it was clear that *C. naudinianus*

Table 2. Pairwise F statistics (F_{st}) estimates among subpopulations (Pop IA, Pop IB, Pop IIA, and Pop IIB) using the POPGENE v1.32 software.

Population	Pop IA	Pop IB	Pop IIA	Pop IIB
Pop IA	0.000			
Pop IB	0.226	0.000		
Pop IIA	0.074	0.266	0.000	
Pop IIB	0.180	0.341	0.100	0.000

Table 3. Genetic diversity of the four subpopulations based on 23 SSR markers.

	Major allele frequency	Avg alleles per locus	Nei's gene diversity index	Observed heterozygosity (H_o)	Polymorphism information content (PIC)
Total	0.55	6.05	0.56	0.10	0.49
Pop I	0.64	3.77	0.45	0.03	0.36
Pop IA	0.65	3.68	0.45	0.04	0.37
Pop IB	0.78	2.50	0.30	0.03	0.26
Pop II	0.56	6.00	0.57	0.18	0.51
Pop IIA	0.62	4.73	0.50	0.14	0.43
Pop IIB	0.60	5.64	0.56	0.20	0.52

(in black color) was distant from the other species, while *C. rehmanii* (pink color) showed genetic similarity to the *C. colocynthis* group (green color) and *C. ecirrhosus* (blue color) was closer to the *C. amarus* group (yellow color). In Pop IIB population, the *C. lanatus* subsp. *vulgaris* group was composed of four accessions, which were phylogenetically closer to the *C. amarus* group than to the

C. colocynthis group. These results were largely in agreement with the findings of Chomicki and Renner (2015) based on plastid and nuclear DNA data showing that the *C. amarus* and *C. ecirrhosus* may belong to the same group, while *C. naudinianus* was far from the other *Citrullus* species.

The phylogenetic relationships can also be reflected by the sexual compatibility in

interspecific hybridization. Several reports have noted that crosses among the three *Citrullus* species (*C. lanatus*, *C. colocynthis*, and *C. ecirrhosus*) produced viable F_1 hybrids while crosses between *Praecitrullus fistulosus* ($2n = 2x = 24$) and *Citrullus* species did not yield fruits (Navot and Zamir, 1987). So far, there is practically no information about the magnitude of the gene flow among species and accessions of *Citrullus*. Our attempts to cross *C. naudinianus* with other species were unsuccessful confirming that *C. naudinianus* is genetically distant from other *Citrullus* species. Thus, it might be the time to reconsider the sister species status of *C. naudinianus* with other species in *Citrullus*.

Construction of a core collection. Based on morphological descriptors and random selection, the USDA and Germplasm Resources Information Network had developed 251 accessions as core set (<<http://www.ars-grin.gov/cgi-bin/npgs/>>), and the 84 watermelon from the USDA core collection we analyzed. In this study, SSR genotypic data were used to construct a core set of 130 from the 1197 accessions by using the software PowerCore. These 130 accessions were from seven *Citrullus* species, and 11 of them were present in the 84-accession core set designated by the USDA. Although this core set only accounted for 10.9% of the BVRC watermelon collection, it had captured all alleles detected in the collection. The Nei's gene diversity index ($N_e = 0.65$) and Shannon's information index ($SW = 1.25$) in this core set were higher than the original 1197 set ($H = 0.56$; $I = 0.99$) or the USDA 84-collection core set ($H = 0.48$; $I = 0.92$). The USDA core set included four accessions from Pop I, 42 from Pop II, and 38 from the admixture group that were from three species: *C. lanatus* subsp. *vulgaris* (77), *C. amarus* (5), and *C. mucosospermus* (2), which seems skewed toward Pop II and the admixture groups. In contrast, the core set we constructed herein had a relatively more balanced representation including 47 accessions from Pop I, 68 from Pop II, and 15 from the admixture group, which covered all seven

Fig. 3. A dendrogram of 71 accessions in Pop IIB, displays three major clusters. The groups represent *Citrullus naudinianus* group [CXG, PI618817, and PI 671961 (black)], *Citrullus colocynthis* group (green) that also included the two *Citrullus rehmanii* accessions [Grif 16376 and PI 632755 (pink)], *Citrullus amarus* group (yellow) that also includes the two accession of *Citrullus ecirrhosus* [PI 632751 and Grif 16945 (blue)], and the four accession of *Citrullus lanatus* subsp. *vulgaris* group [PI 482288, PI 505586, Seychelles and Colorado Preserving (purple color)].

Fig. 4. Distribution of Nei's gene diversity index (Nei) and Shannon's information index (SW) among 23 SSR markers in the core set (C-Nei; C-SW) and the entire collection (E-Nei; E-SW), compared with 84 American core set (AC-Nei; AC-SW). Nei's gene diversity index and SW were calculated using the POPGENE v1.32 software (Yeh et al., 1997). The entire collection included 1197 accessions, a core set of 130 accessions was developed from the entire collection, and 84 watermelon from the U.S. Department of Agriculture core collection we analyzed.

species in *Citrullus* indicating greater genetic diversity of the 130 core set (Fig. 4).

Liang et al. (2015) selected 55 apple genotypes as the core collection and noted that, even though the core collection resulted in the most suitable based on the M-strategy, different subpopulations of the same size was able to retain the same amount of genetic variation. Since molecular markers are largely neutral in selection, maximum marker allele diversity does not necessarily mean diversity for traits that are more useful for plant breeding. For this reason, additional criteria can be used for the definition of the most appropriate subset of accessions representative of the *Citrullus* germplasm, which may include phenotypic and resistance traits, as well as historical or economically important target traits. In our 130 line core collection, accessions from *C. naudinianus*, *C. ecirrhosus*, and *C. rehmii* are underrepresented. Hence, future explorations in these species can possibly add novel alleles for disease resistances or abiotic stress tolerances, which are important for watermelon breeding.

In summary, the core set identified in this study is very useful for watermelon breeders. It permits a better organization of the crop's gene pool management, more efficient sampling of the available germplasm resources, and better access to useful genetic variation for breeders.

Literature Cited

- Achigan-Dako, E., E. Avohou, C. Linsoussi, A. Ahanchede, R. Vodouhe, and F. Blattner. 2015. Phenetic characterization of *Citrullus* spp. (Cucurbitaceae) and differentiation of egusi-type (*C. mucospermus*). *Genet. Resources Crop Evol.*
- Chomici, G. and S.S. Renner. 2015. Watermelon origin solved with molecular phylogenetics including Linnaean material: Another example of museomics. *New Phytol.* 205:526–532.
- Dane, F. and J. Liu. 2006. Diversity and origin of cultivated and citron type watermelon (*Citrullus lanatus*). *Genet. Resources Crop Evol.* 54:1255–1265.
- Evanno, G., S. Regnaut, and J. Goudet. 2005. Detecting the number of clusters of individuals using the software STRUCTURE: A simulation study. *Mol. Ecol.* 14:2611–2620.
- Frankel, O.H. and A.H.D. Brown. 1984. Current plant genetic resources: A critical appraisal, p. 3–13. In: V.L. Chopra (ed.). *Genetics, new frontiers: Proceedings of the XV International Congress of Genetics*. Oxford & IBH Publishing Co., New Delhi, India.
- Guo, X. and R.C. Elston. 1999. Linkage information content of polymorphic genetic markers. *Hum. Hered.* 49:112–118.
- Guo, S., J. Zhang, H. Sun, J. Salse, W.J. Lucas, H. Zhang, Y. Zheng, L. Mao, Y. Ren, Z. Wang, J. Min, X. Guo, F. Murat, B.K. Ham, Z. Zhang, S. Gao, M. Huang, Y. Xu, S. Zhong, A. Bombarely, L.A. Mueller, H. Zhao, H. He, Y. Zhang, Z. Zhang, S. Huang, T. Tan, E. Pang, K. Lin, Q. Hu, H. Kuang, P. Ni, B. Wang, J. Liu, Q. Kou, W. Hou, X. Zou, J. Jiang, G. Gong, K. Klee, H. Schoof, Y. Huang, X. Hu, S. Dong, D. Liang, J. Wang, K. Wu, Y. Xia, X. Zhao, Z. Zheng, M. Xing, X. Liang, B. Huang, T. Lv, J. Wang, Y. Yin, H. Yi, R. Li, M. Wu, A. Levi, X. Zhang, J.J. Giovannoni, J. Wang, Y. Li, Z. Fei, and Y. Xu. 2013. The draft genome of watermelon (*Citrullus lanatus*) and resequencing of 20 diverse accessions. *Nature Genet.* 45:51–58.
- Hu, J., P. Wang, Y. Su, R. Wang, Q. Li, and K. Sun. 2014. Microsatellite diversity, population structure, and core collection formation in melon germplasm. *Plant Mol. Biol. Rpt.* 33:439–447.
- Jarret, R.L., L.C. Merrick, T. Holms, J. Evans, and M.K. Aradhya. 1997. Simple sequence repeats in watermelon (*Citrullus lanatus* (Thunb.) Matsum. & Nakai). *Genome* 40:1297–1306.
- Jarret, R.L. and M. Newman. 2000. Phylogenetic relationships among species of *Citrullus* and the placement of *C. rehmii* De Winter as determined by Internal Transcribed Spacer (ITS) sequence heterogeneity. *Genet. Resources Crop Evol.* 47:215–222.
- Joobeur, T., G. Gusmini, X. Zhang, A. Levi, Y. Xu, T.C. Wehner, M. Oliver, and R.A. Dean. 2006. Construction of a watermelon BAC library and identification of SSRs anchored to melon or *Arabidopsis* genomes. *Theor. Appl. Genet.* 112:1553–1562.
- Kim, K.W., H.K. Chung, G.T. Cho, K.H. Ma, D. Chandrabalan, J.G. Gwag, T.S. Kim, E.G. Cho, and Y.J. Park. 2007. PowerCore: A program applying the advanced M strategy with a heuristic search for establishing core sets. *Bioinformatics* 23:2155–2162.
- Kong, Q., J. Chen, Y. Liu, Y. Ma, P. Liu, S. Wu, Y. Huang, and Z. Bie. 2014. Genetic diversity of Cucurbita rootstock germplasm as assessed using simple sequence repeat markers. *Sci. Hort.* 175:150–155.
- Kottapalli, K.R., M.D. Burow, G. Burow, J. Burke, and N. Puppala. 2007. Molecular characterization of the U.S. peanut mini core collection using microsatellite markers. *Crop Sci.* 47:1718–1727.
- Kwon, Y.S., Y.H. Oh, S.I. Yi, H.Y. Kim, J.M. An, S.G. Yang, S.H. Ok, and J.S. Shin. 2010. Informative SSR markers for commercial variety discrimination in watermelon (*Citrullus lanatus*). *Genes Genome* 32:115–122.
- Laghetta, G. and K. Hammer. 2007. The Corsican citron melon (*Citrullus lanatus* (Thunb.) Matsum. et Nakai subsp. *lanatus* var. *citroides* (Bailey) Mansf. ex Greb.) a traditional and neglected crop. *Genet. Resources Crop Evol.* 54:913–916.
- Levi, A., J.A. Thies, W.P. Wechter, H.F. Harrison, A.M. Simmons, U.K. Reddy, P. Nimmakayala, and Z. Fei. 2013. High frequency oligonucleotides: Targeting active gene (HFO-TAG) markers revealed wide genetic diversity among *Citrullus* spp. accessions useful for enhancing disease or pest resistance in watermelon cultivars. *Genet. Resources Crop Evol.* 60:427–440.
- Levi, A. and C. Thomas. 1999. An improved procedure for isolation of high quality DNA from watermelon and melon leaves. *Cucurbit Genet. Coop. Rpt.* 22:41–42.
- Levi, A., C.E. Thomas, M. Newman, O.U.K. Reddy, X. Zhang, and Y. Xu. 2004. ISSR and AFLP markers differ among American watermelon cultivars with limited genetic diversity. *J. Amer. Soc. Hort. Sci.* 129:553–558.
- Liang, W., L. Dondini, P. De Franceschi, R. Paris, S. Sansavini, and S. Tartarini. 2015. Genetic diversity, population structure and construction of a core collection of apple cultivars from Italian germplasm. *Plant Mol. Biol. Rpt.* 33:458–473.
- Liu, K. and S.V. Muse. 2005. PowerMarker: An integrated analysis environment for genetic marker analysis. *Bioinformatics* 21:2128–2129.
- Lv, J., J. Qi, Q. Shi, D. Shen, S. Zhang, G. Shao, H. Li, Z. Sun, Y. Weng, Y. Shang, X. Gu, X. Li, X. Zhu, J. Zhang, R. van Treuren, W. van Dooijeweert, Z. Zhang, and S. Huang. 2012. Genetic diversity and population structure of cucumber (*Cucumis sativus* L.). *PLoS One* 7: e46919.
- Minsart, L.A., I.A. Zoro bi, Y. Djè, J.P. Baudoin, A.L. Jacquemart, and P. Bertin. 2011. Set up of simple sequence repeat markers and first investigation of the genetic diversity of West-African watermelon (*Citrullus lanatus* ssp. *vulgaris* oleaginous type). *Genet. Resources Crop Evol.* 58:805–814.
- Mujaju, C., J. Sehic, G. Werlemark, L. Garkava-Gustavsson, M. Fatih, and H. Nybom. 2010. Genetic diversity in watermelon (*Citrullus lanatus*) landraces from Zimbabwe revealed by RAPD and SSR markers. *Hereditas* 147:142–153.
- Mujaju, C., G. Werlemark, L. Garkava-Gustavsson, M.J.M. Smulders, and H. Nybom. 2012. Molecular and farmer-based comparison of a wild-weed and landrace complex of watermelon in Zimbabwe. *Austral. J. Crop Sci.* 6:656–661.
- Mujaju, C., A. Zborowska, G. Werlemark, L. Garkava-Gustavsson, S.B. Andersen, and H. Nybom. 2011. Genetic diversity among and within watermelon (*Citrullus lanatus*) landraces in Southern Africa. *J. Hort. Sci. Biotechnol.* 86:353–358.
- Munisse, P., B.D. Jensen, and S.B. Andersen. 2013. Genetic differentiation of watermelon landraces in Mozambique using microsatellite markers. *Afr. J. Biotechnol.* 12:5513–5521.
- Nantoumé, A.D., S.B. Andersen, and B.D. Jensen. 2013. Genetic differentiation of watermelon landrace types in Mali revealed by microsatellite (SSR) markers. *Genet. Resources Crop Evol.* 60:2129–2141.
- Navot, N. and D. Zamir. 1987. Isozyme and seed protein phylogeny of the genus *Citrullus* (Cucurbitaceae). *Plant Syst. Evol.* 156:61–67.
- Nimmakayala, P., V.L. Abburi, A. Bhandary, L. Abburi, V.G. Vajja, R. Reddy, S. Malkaram, P. Venkatramana, A. Wijeratne, Y.R. Tomason, A. Levi, T.C. Wehner, and U.K. Reddy. 2014. Use of VeraCode 384-plex assays for watermelon diversity analysis and integrated genetic map of watermelon with single nucleotide polymorphisms and simple sequence repeats. *Mol. Breeding* 34:537–548.
- Pritchard, J.K., M. Stephens, and P. Donnelly. 2000. Inference of population structure from multilocus genotype data. *Genetics* 155:945–959.
- Rao, E.S., P. Kadirvel, R.C. Symonds, S. Geethanjali, and A.W. Ebert. 2012. Using SSR markers to map genetic diversity and population structure of *Solanum pimpinellifolium* for development of a core collection. *Plant Genet. Resources* 10:38–48.
- Remington, D.L., J.M. Thornsberry, Y. Matsuoka, L.M. Wilson, S.R. Whitt, J. Doebley, S. Kresovich, M.M. Goodman, and E. S. Buckler. 2001. Structure of linkage disequilibrium and phenotypic associations in the maize genome. *Proc. Natl. Acad. Sci. USA* 98:11479–11484.

- Upadhyaya, H., R. Ortiz, P. Bramel, and S. Singh. 2003. Development of a groundnut core collection using taxonomical, geographical and morphological descriptors. *Genet. Resources Crop Evol.* 50:139–148.
- Wingen, L.U., S. Orford, R. Gorum, M. Leverington-Waite, L. Bilham, T.S. Patsiou, M. Ambrose, J. Dicks, and S. Griffiths. 2014. Establishing the A. E. Watkins landrace cultivar collection as a resource for systematic gene discovery in bread wheat. *Theor. Appl. Genet.* 127:1831–1842.
- Yeh, F.C., R.C. Yang, T.B. Boyle, J. Ye, and J. Mao. 1997. Popgene, the user-friendly shareware for population genetic analysis. *Agricultural Food and Forestry Molecular Biology* Centre, University of Alberta, Canada. <<http://www.ualberta.ca/~fyeh/faqs.html>>.
- Zhang, H., H. Wang, S. Guo, Y. Ren, G. Gong, Y. Weng, and Y. Xu. 2012. Identification and validation of a core set of microsatellite markers for genetic diversity analysis in watermelon, *Citrullus lanatus* Thunb. *Matsum. Nakai. Euphytica* 186:329–342.

Supplemental Table 1. List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.1	Zxjimu	<i>Citrullus lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.2	Jx-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.3	98r	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.4	Zzjimu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.5	Jx-2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.6	917	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.7	Jx-3 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.8	302	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.9	Hjx-4 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.10	Dzjimu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.11	217	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.12	Jx-5 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.13	Au-Sweet-Scarlet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.14	Jx-6 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.15	Lumu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.16	K209	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.17	357	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.18	Jx-7-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.19	303	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.20	198	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.21	159bp	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.22	J102zg	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.23	Jx-8-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.24	Fengmu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed	Y	
No.25	Shezt	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.26	K210	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.27	09gsfengf	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.28	Gf-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.29	T326	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.30	Gb (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.31	S948m-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.32	S948f-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.33	T2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.34	Yixuan	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.35	Zaojia (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.36	Lwixuan	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.37	Glzjia (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.38	C2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.39	Sxing (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.40	Hx-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.41	Guim	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.42	Guif	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.43	Weilong (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.44	Xin102	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.45	Hpx-1-Fb	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.46	Hpx-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.47	Zxbairou	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.48	Xiumu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.49	Jingxiuf1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.50	Wheimu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.51	Wheifu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		

(Continued on next page)

Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.52	Jingli (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.53	Lanfu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed	Y	
No.54	Jinglan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.55	Tianhuang (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.56	T409	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.57	T351	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.58	T409351	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.59	Sd	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.60	Jinglin-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.61	Ming58	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.62	505	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.63	Mofu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.64	Shuangma4	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.65	Glwzix-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.66	Heimi4	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.67	Zixuanhe	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.68	Hewzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.69	Xin1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.70	Glxin1hb	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.71	Glxin1h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.72	Fengle1h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.73	Fengkang8h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.74	Heishuai (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.75	Jubao1h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.76	Tianniu-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.77	Fengle5h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.78	Aomi001 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.79	Domi001 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.80	Gxwz3h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.81	Ydwuzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.82	Yuanshijif (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.83	Jiale (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.84	Jiami (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.85	Lilan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.86	Qiyuan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.87	Heimudan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Admixture		
No.88	Heishuai-2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.89	Lihua (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.90	Jhdgheimr (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.91	Milin (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.92	Xiawa (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.93	Xianguo (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.94	Lbjawang (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.95	Lbtianjia (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.96	Lb168 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.97	Lbdhmr (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.98	Dgexiaoyu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.99	Klexiaoyu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.100	Huanxin (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.101	Huanteng (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.102	Zgxheimr (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.103	Shubao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.104	Mgeiguan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.105	Miguan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.106	Huaguan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.107	Yitezaohua (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.108	Yongfihao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.109	Xd-04	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.110	Zaoxing (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.111	Dydgthmr (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.112	Biyu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop Pop IA		
No.113	Jinghui (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.114	Longyu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.115	Tiaojiao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.116	Hn-001 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.117	Hn-002 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.118	Hn-003 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.119	Hn-005 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.120	Hn-006 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.121	Hn-011 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.122	Hn-012 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.123	Hn-013 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.124	Hn-014 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.125	Hn-015 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.126	Hn-016 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.127	Hn-019 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.128	Yy926wz (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.129	Jinza18-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.130	W588 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.131	Dfjiaozi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.132	Hau-2008 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.133	Jinyuli (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.134	Meiyue (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.135	Qiongli (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.136	Meisnv (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.137	Jinlouwz (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.138	Blzkuong (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.139	Jinlidu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.140	Mitianxia (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.141	Julong (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.142	QI2008 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.143	Wg2hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.144	Wg6hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.145	Zyounhao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.146	Mengluts (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.147	Jxxigua (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.148	Tejia (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.149	Dalan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.150	Yzleifen (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.151	Youxiu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.152	8424wz (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.153	8424wz-Hz (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.154	Xxmeidou (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.155	Meifeng (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.156	Reilong (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.157	Jialan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.158	Jintaiyang (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.159	Tunfeng (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.160	Xiaohuangling (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.161	Jingduanwuzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.162	Xiuhua (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.163	Xiunv (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.164	Hongyuhai (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.165	Meiling (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.166	Tianli (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.167	Xiali (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.168	Xiuya (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.169	Yuqili (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.170	Lvbao01 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.171	Lvbao02 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.172	Lvbao03 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.173	Lvbao04 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.174	Lvbao05 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.175	Lvbao06 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.176	Lvbao07 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.177	Lvbao08 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.178	Lvbao09 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.179	Lvbao10 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.180	Lvshen (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.181	Zaoshuxigua1hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.182	Zaoshuxigua2hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.183	Zaoshuxigua3hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.184	Zaoshuxigua4hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.185	Zaoshuxigua5hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.186	Zaoshuxigua6hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.187	Zaoshuxigua7hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.188	Zaoshuxigua8hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.189	Zaoshuxigua9hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.190	Zaoshuxigua10hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.191	Zaoshuxigua11hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.192	Zaoshuxigua12hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.193	Zaoshuxigua13hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.194	Zhongshuxigua14hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.195	Zhongshuxigua16hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.196	Zhongshuxigua17hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.197	Wanshuxigua19hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.198	Wanshuxigua20hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.199	Wanshuxigua21hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.200	Wanshuxigua22hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.201	Wanshuxigua23hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.202	Wanshuxigua24hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.203	Wanshuxigua25hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.204	Wanshuxigua26hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.205	H962 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.206	Hualiangdhamren (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.207	Xinlan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.208	Xinnongdhamren (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.209	Xinnongdhamren (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.210	Yiqunlvmei (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.211	Beinong998 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.212	Heibao2hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.213	Heijuba (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.214	Shuli (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.215	Hongxiaoshuai (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.216	Jinpengyangguang (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.217	L-600 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.218	Beinonghongjie (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.219	Beinongji N (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.220	Huangjinliao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.221	Zhenqi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.222	Wmc8502 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.223	Wmc9702 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.224	Shuitong (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.225	Rwr8207 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.226	Rwr8212 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.227	Xiaohetzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.228	Xiaolin (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.229	Heifeiqui (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.230	Lymingzhu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.231	Xindameiren (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.232	Shitelai564 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.233	Xinhei (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.234	Hongxiu1hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.235	Hongxiu2hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.236	Lds-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.237	Lds-2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.238	Linzi1hao-M (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.239	Linzi2hao-M (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.240	Lizi1/2hao-F	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.241	Zhongyuan An	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.242	Hpzhongyuan An	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.243	Daguoixin1hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.244	Fengguang (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.245	Xiaojinlin (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.246	Jinmeiren (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.247	Fengguang199 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.248	Qilinwang2hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.249	Xinxiaolan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.250	Chunxiaolan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.251	Aoliang (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.252	Yongjiameiren (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.253	W29-8	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.254	W39-1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.255	W39-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.256	SS-1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.257	SS-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.258	SS-3	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.259	SS-4	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.260	SS-5	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.261	SS-6	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.262	Hongao106 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.263	Hongao5hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.264	Huabaowu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.265	Quanfufu7hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.266	Shijitda (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.267	Jinza18-2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.268	Hongdu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.269	Xiaoyu7hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.270	Xiaoyu8hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.271	Xiaoyuhongwu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.272	Xuefengxin1hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.273	Taiwanxin1hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.274	Tndgheimen (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.275	Jiyant2-1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.276	Jiyant2-2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.277	Jiyant2-3 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.278	Xinjinlan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.279	ZG-1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.280	ZG-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.281	ZG-3	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.282	ZG-4	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.283	R6 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.284	R7 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.285	R10 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.286	R11 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.287	R12 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.288	R13 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.289	R18 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.290	X1 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.291	X2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.292	X3 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.293	X6 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.294	X7 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.295	X8 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.296	Reyanxiangxiu (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Admixture		
No.297	Reyanbaofeng (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.298	Chenglan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.299	Wm435 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.300	Wm436 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.301	Wm437 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.302	Meixianzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.303	Huaxianzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.304	Qilinxianzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.305	Zhengdaqlin (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.306	Luqingaokang3hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.307	Shangdao1hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.308	Ksu-430 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.309	Xiaotianzi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.310	Qinhong208 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.311	Xinongxinli (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.312	Hongshuangxi (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.313	Heiganlan (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.314	Jinghua5h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.315	Jinghua6h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.316	Jinghua7h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.317	Jinghua8h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.318	Jinghua9h (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.319	Chenlong3hao (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.320	W09-2 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.321	W09-3 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.322	W09-5 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.323	W09-6 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.324	W09-7 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.325	W09-8 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.326	W09-9 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.327	W09-10 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.328	W09-11 (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.329	Heshanbaohua (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.330	Heshanlihua (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.331	Lukanglong (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.332	Zaojia(84-24) (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.333	Fengfu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.334	182	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.335	Arikora	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.336	Au-produce	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.337	Big Crimson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.338	Black Boy	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop I admixed		
No.339	Yellow belly	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.340	Blacklee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.341	Black Stone	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.342	Blue(Rind) Watermelon	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.343	Buwells Gray	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.344	Festival (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.345	Garrison	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.346	Georgia Rattle Snake	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.347	Golden	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.348	Golden Honey	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.349	Golden Honey Cream	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IB		
No.350	Golden Honey Sweet Kind	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.351	Gray Stone	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.352	Honey Red	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop I admixed		
No.353	Hope Diamond	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop I admixed		
No.354	Ho Yellow Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.355	Ho Red Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.356	King & Queen	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.357	Klondike Striped	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.358	Klondike WR3	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.359	Legacy	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.360	Mickylee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.361	Navajo Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.362	NC Yellow Lary Str	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.363	Calsweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.364	Celebration/All Sweet Type (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.365	Champ On #2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.366	Chileen Black	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.367	Chubby Gray	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.368	Chris-Cross	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.369	Cletexx Spotted	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.370	Cobb Gem	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.371	Coles Early 2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.372	Green Saskat	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop I admixed		
No.373	Crimson Tide (F ₁)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.374	Delicious Big Sugar	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.375	Dixie Lee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.376	Dixie Queen	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.377	Dunbarton	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.378	Early Canada	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.379	Early Northern Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.380	Northern Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.381	Peacock Shipper	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.382	Perola	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.383	Cnic	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.384	Princeton	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.385	Rhode Island Red	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.386	Stone Mountain	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.387	Sugar Baby	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.388	Sunshade (02. Seminis)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		Y
No.389	Summer Gold	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.390	Tasti Gold	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.391	Tender Gold	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.392	Tender Sweet Qranfe Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.393	Texas Wheeler	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.394	Tom Watson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.395	Wato	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.396	Yellow Crimson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.397	Yellow Shipper	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.398	Royal Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.399	H-19 (98rd)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.400	Klondike	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.401	Summit	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.402	Angelino Black Seed	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.403	Peerless Ice Cream	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.404	Moon and Stars	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.405	Hankes Bury	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		Y
No.406	Park Green	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.407	Grif 1730	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Admixture	Admixture		
No.408	Grif 1731	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.409	PI 161373	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.410	Grif 1732	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.411	Grif 5596	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		Y
No.412	Grif 5597	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.413	Grif 5598	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.414	Grif 12336	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.415	PI 163204	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.416	PI 163205	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.417	PI 164247	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Liberia	Pop II	Pop IIA		
No.418	PI 164474	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.419	PI 164570	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop I	Pop IA		
No.420	PI 164636	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.421	PI 164685	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		Y
No.422	PI 164687	<i>C. mucospermus</i>	India	Pop I	Pop IA	Y	
No.423	PI 164804	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.424	PI 164992	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop I	Pop IA		
No.425	PI 165002	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.426	PI 165024	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.427	PI 165448	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Mexico	Pop II	Pop IIA		Y
No.428	PI 166993	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.429	PI 167026	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.430	PI 167045	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.431	PI 167124	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.432	PI 167126	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.433	PI 167222	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.434	PI 169233	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.435	PI 169235	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.436	PI 169236	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		Y
No.437	PI 169237	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.438	PI 169239	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.439	PI 169243	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.440	PI 169244	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop II admixed		
No.441	PI 169245	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Admixture		
No.442	PI 169246	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.443	PI 169247	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.444	PI 169249	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.445	PI 169251	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.446	PI 169254	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.447	PI 169255	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		Y
No.448	PI 169256	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Admixture		
No.449	PI 169257	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.450	PI 169259	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.451	PI 169260	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.452	PI 169262	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.453	PI 169264	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.454	PI 169265	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.455	PI 169267	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.456	PI 169268	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.457	PI 169269	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.458	PI 169271	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.459	PI 169275	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.460	PI 169276	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.461	PI 169280	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.462	PI 169287	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.463	PI 169288	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.464	PI 169293	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.465	PI 169295	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.466	PI 169297	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.467	PI 169300	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop I	Pop IA	Y	
No.468	PI 171580	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		Y
No.469	PI 171581	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.470	PI 171582	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.471	PI 171584	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.472	PI 172788	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.473	PI 172789	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.474	PI 172790	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.475	PI 172796	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.476	PI 172801	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.477	PI 172803	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.478	PI 172804	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		Y
No.479	PI 172805	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.480	PI 172805	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.481	PI 173669	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.482	PI 173888	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.483	PI 174099	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.484	PI 174101	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.485	PI 174103	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.486	PI 174105	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.487	PI 174109	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.488	PI 175651	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.489	PI 175661	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.490	PI 175662	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.491	PI 175664	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.492	PI 176485	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.493	PI 176486	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.494	PI 176487	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		Y
No.495	PI 176489	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.496	PI 176492	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.497	PI 176494	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		Y
No.498	PI 176497	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.499	PI 176906	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.500	PI 176908	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.501	PI 176909	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.502	PI 176911	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		Y
No.503	PI 176916	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.504	PI 176919	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.505	PI 176921	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.506	PI 176922	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.507	PI 177325	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.508	PI 177327	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		Y
No.509	PI 178872	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.510	PI 178873	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.511	PI 178876	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.512	PI 179232	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.513	PI 179235	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.514	PI 179236	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.515	PI 179241	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Iraq	Admixture	Admixture		
No.516	PI 179242	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Iraq	Admixture	Admixture		
No.517	PI 179878	<i>C. mucospermus</i>	India	Admixture	Admixture	Y	
No.518	PI 179879	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.519	PI 179880	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.520	PI 179882	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.521	PI 179884	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.522	PI 179886	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.523	PI 180276	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.524	PI 180277	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop I	Pop IA		
No.525	PI 180278	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop I	Pop IA		
No.526	PI 180426	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		Y
No.527	PI 180427	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.528	PI 181740	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Lebanon	Admixture	Admixture		
No.529	PI 181742	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Lebanon	Admixture	Admixture	Y	
No.530	PI 181936	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Pop II	Pop IIA		
No.531	PI 182176	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		Y
No.532	PI 182179	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.533	PI 182933	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		Y
No.534	PI 182935	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.535	PI 183023	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.536	PI 183123	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.537	PI 183124	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.538	PI 183299	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.539	PI 183398	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		Y
No.540	PI 185636	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ghana	Pop II	Pop IIA		
No.541	PI 188808	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Philippines	Pop II	Pop IIA		Y
No.542	PI 189225	<i>C. anarus</i>	Zaire	Pop II	Pop IIA		Y
No.543	PI 193963	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia	Admixture	Admixture		Y
No.544	PI 193964	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia	Admixture	Admixture		
No.545	PI 193965	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia	Admixture	Admixture		
No.546	PI 195771	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Guatemala	Pop II	Pop IIA		
No.547	PI 195928	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia	Admixture	Admixture		
No.548	PI 207471	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Afghanistan	Admixture	Admixture		
No.549	PI 212208	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Greece	Pop II	Pop IIA		
No.550	PI 212983	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		Y
No.551	PI 214044	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.552	PI 214316	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.553	PI 226634	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Iran	Admixture	Admixture		
No.554	PI 229749	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Iran	Admixture	Admixture		
No.555	PI 229806	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Iran	Pop I	Pop I admixed		
No.556	PI 234603	<i>C. lanatus</i> subsp. <i>vulgaris</i>	New Zealand	Pop II	Pop II admixed	Y	
No.557	PI 246559	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Senegal	Admixture	Admixture		
No.558	PI 253174	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Serbia	Admixture	Admixture		
No.559	PI 254428	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Lebanon	Admixture	Admixture		Y
No.560	PI 254622	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Sudan	Admixture	Admixture		
No.561	PI 254736	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Senegal	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.562	PI 254740	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Senegal	Pop II	Pop IIA	Y	Y
No.563	PI 254741	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Senegal	Pop II	Pop IIA	Y	Y
No.564	PI 255662	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Afghanistan	Admixture	Admixture		Y
No.565	PI 266028	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Venezuela	Admixture	Admixture		Y
No.566	PI 269465	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Admixture	Admixture		
No.567	PI 269466	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Admixture	Admixture		
No.568	PI 269676	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Belize	Admixture	Admixture		
No.569	PI 269679	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Belize	Admixture	Admixture		
No.570	PI 269680	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Belize	Admixture	Admixture		
No.571	PI 270141	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		Y
No.572	PI 270143	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.573	PI 270144	<i>C. mucospermus</i>	Greece	Admixture	Admixture	Y	
No.574	PI 270145	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Greece	Pop II	Pop IIA		
No.575	PI 270309	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Philippines	Admixture	Admixture		
No.576	PI 270524	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Israel	Pop II	Pop IIA	Y	
No.577	PI 270545	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Sudan	Pop I	Pop IA	Y	Y
No.578	PI 270546	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ghana	Admixture	Admixture		
No.579	PI 270548	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ghana	Admixture	Admixture		
No.580	PI 271747	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Afghanistan	Pop II	Pop II admixed		
No.581	PI 271750	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ghana	Pop I	Pop I admixed		
No.582	PI 271751	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ghana	Pop I	Pop IA		
No.583	PI 271773	<i>C. amarus</i>	South Africa	Pop II	Pop IIB	Y	Y
No.584	PI 271775	<i>C. amarus</i>	South Africa	Pop II	Pop IIB		
No.585	PI 271776	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Africa	Admixture	Admixture		
No.586	PI 271985	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Somalia	Admixture	Admixture		
No.587	PI 273479	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia	Pop I	Pop IA	Y	Y
No.588	PI 273481	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia	Admixture	Admixture	Y	
No.589	PI 274795	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Pop I	Pop I admixed		
No.590	PI 275628	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Admixture	Admixture		
No.591	PI 277974	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.592	PI 277975	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop I	Pop IA		Y
No.593	PI 277976	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.594	PI 278012	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		Y
No.595	PI 278020	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Pop II	Pop IIA		
No.596	PI 278023	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.597	PI 278032	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.598	PI 278046	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.599	PI 278048	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.600	PI 279461	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		Y
No.601	PI 288317	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Japan	Admixture	Admixture		
No.602	PI 295850	<i>C. amarus</i>	India	Admixture	Admixture		Y
No.603	PI 296337	<i>C. amarus</i>	South Africa	Pop II	Pop IIB		
No.604	PI 296342	<i>C. amarus</i>	South Africa	Pop II	Pop IIB	Y	
No.605	PI 296343	<i>C. amarus</i>	South Africa	Pop II	Pop IIB		
No.606	PI 299378	<i>C. amarus</i>	Canada	Pop II	Pop IIB		
No.607	PI 307748	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Philippines	Admixture	Admixture		
No.608	PI 314236	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Uzbekistan	Admixture	Admixture		Y
No.609	PI 344298	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey	Admixture	Admixture		
No.610	PI 357661	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.611	PI 357684	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.612	PI 357685	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.613	PI 357690	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.614	PI 357691	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.615	PI 357696	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.616	PI 357720	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.617	PI 357721	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.618	PI 357724	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.619	PI 357727	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.620	PI 357731	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop I	Pop IA		
No.621	PI 357733	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.622	PI 357734	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.623	PI 357736	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.624	PI 368497	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.625	PI 368500	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.626	PI 368501	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.627	PI 368502	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.628	PI 368509	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop II admixed		
No.629	PI 368523	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.630	PI 368527	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop I	Pop IA		
No.631	PI 368528	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.632	PI 368530	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.633	PI 370426	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.634	PI 370428	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.635	PI 370430	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.636	PI 370434	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.637	PI 378611	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zaire	Pop I	Pop IA		
No.638	PI 378615	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zaire	Admixture	Admixture		
No.639	PI 378617	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zaire	Pop I	Pop IA		
No.640	PI 379223	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.641	PI 379226	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.642	PI 379227	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.643	PI 379229	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.644	PI 379231	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.645	PI 379234	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop I	Pop IA		
No.646	PI 379238	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.647	PI 379239	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.648	PI 379240	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.649	PI 379241	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.650	PI 379243	<i>C. amarus</i>	Former Serbia and Montenegro	Pop II	Pop IIB		
No.651	PI 379245	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		
No.652	PI 379248	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.653	PI 379249	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.654	PI 379254	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.655	PI 379255	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Pop II	Pop IIA		
No.656	PI 379256	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Serbia and Montenegro	Admixture	Admixture		Y
No.657	PI 381694	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.658	PI 381699	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.659	PI 381700	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.660	PI 381701	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.661	PI 381704	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		Y
No.662	PI 381705	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.663	PI 381707	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F1.

No.	Name of line (F1)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.664	PI 381709	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.665	PI 381711	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.666	PI 381715	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		Y
No.667	PI 381716	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.668	PI 381719	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.669	PI 381721	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		Y
No.670	PI 381725	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.671	PI 381728	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.672	PI 381733	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.673	PI 381737	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.674	PI 381740	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		
No.675	PI 381741	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Admixture	Admixture		
No.676	PI 392291	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Kenya	Pop I	Pop IA	Y	Y
No.677	PI 418762	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Afghanistan	Pop II	Pop IIA		Y
No.678	PI 431579	<i>C. lanatus</i> subsp. <i>vulgaris</i>	India	Pop II	Pop IIA		Y
No.679	PI 435085	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.680	PI 435991	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	Y
No.681	PI 438671	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Mexico	Admixture	Admixture		
No.682	PI 438673	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Mexico	Pop II	Pop IIA		
No.683	PI 438674	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Mexico	Admixture	Admixture		
No.684	PI 438677	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Mexico	Pop II	Pop IIA		
No.685	PI 458738	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Paraguay	Pop II	Pop II admixed		Y
No.686	PI 458739	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Paraguay	Admixture	Admixture		
No.687	PI 464872	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.688	PI 470248	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Indonesia	Pop II	Pop IIA		
No.689	PI 476324	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Admixture	Admixture		Y
No.690	PI 476325	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Admixture	Admixture		
No.691	PI 476326	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Pop II	Pop IIA		
No.692	PI 476327	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Admixture	Admixture		
No.693	PI 476328	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Admixture	Admixture		
No.694	PI 476329	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Pop I	Pop IA		
No.695	PI 476330	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Admixture	Admixture		
No.696	PI 481871	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Sudan	Admixture	Admixture		
No.697	PI 482273	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.698	PI 482247	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop II admixed		
No.699	PI 482249	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Admixture	Admixture		
No.700	PI 482250	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.701	PI 482251	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.702	PI 482252	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.703	PI 482255	<i>C. mucospermus</i>	Zimbabwe	Pop II	Pop II admixed	Y	
No.704	PI 482257	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.705	PI 482261	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.706	PI 482260	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.707	PI 482262	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.708	PI 482263	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.709	PI 482264	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.710	PI 482267	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.711	PI 482269	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.712	PI 482272	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.713	PI 482277	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.714	PI 482278	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F1.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.715	PI 482279	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.716	PI 482280	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.717	PI 482281	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.718	PI 482285	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Admixture	Admixture		
No.719	PI 482286	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB	Y	
No.720	PI 482288	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIB		
No.721	PI 482290	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.722	PI 482291	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.723	PI 482292	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Admixture	Admixture		
No.724	PI 482293	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.725	PI 482298	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.726	PI 482299	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.727	PI 482301	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.728	PI 482303	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.729	PI 482304	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.730	PI 482305	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.731	PI 482306	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.732	PI 482307	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB	Y	
No.733	PI 482308	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.734	PI 482309	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.735	PI 482311	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.736	PI 482314	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.737	PI 482315	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.738	PI 482316	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.739	PI 482317	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.740	PI 482319	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.741	PI 482321	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.742	PI 482323	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.743	PI 482324	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.744	PI 482327	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.745	PI 482328	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.746	PI 482331	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.747	PI 482335	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.748	PI 482337	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.749	PI 482339	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.750	PI 482340	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.751	PI 482343	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.752	PI 482344	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.753	PI 482345	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.754	PI 482346	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.755	PI 482349	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Admixture	Admixture		
No.756	PI 482357	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.757	PI 482374	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.758	PI 482378	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Admixture	Admixture		
No.759	PI 487458	<i>C. mucospermus</i>	Venezuela	Admixture	Admixture		
No.760	PI 487459	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Venezuela	Admixture	Admixture		
No.761	PI 490375	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		
No.762	PI 490377	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.763	PI 490378	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.764	PI 491265	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zimbabwe	Pop II	Pop IIA		Y
No.765	PI 494527	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Nigeria	Pop II	Pop IIA		Y

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F1.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.766	PI 494530	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Nigeria	Pop II	Pop IIA		Y
No.767	PI 494815	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		Y
No.768	PI 494816	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.769	PI 494819	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.770	PI 494821	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.771	PI 500302	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.772	PI 500305	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.773	PI 500306	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.774	PI 500307	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		Y
No.775	PI 500309	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.776	PI 500310	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.777	PI 500311	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.778	PI 500312	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.779	PI 500314	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.780	PI 500316	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.781	PI 500317	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		Y
No.782	PI 500318	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.783	PI 500321	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.784	PI 500324	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Admixture	Admixture		
No.785	PI 500327	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.786	PI 500331	<i>C. ananrus</i>	Zambia	Pop II	Pop IIB		
No.787	PI 500332	<i>C. ananrus</i>	Zambia	Pop II	Pop IIB		
No.788	PI 500336	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.789	PI 500338	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.790	PI 500341	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.791	PI 500344	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.792	PI 500345	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.793	PI 500352	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.794	PI 500353	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.795	PI 502315	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ukraine	Admixture	Admixture		
No.796	PI 502316	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Uzbekistan	Pop II	Pop IIA		Y
No.797	PI 502318	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Uzbekistan	Admixture	Admixture		
No.798	PI 502319	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Uzbekistan	Admixture	Admixture	Y	
No.799	PI 505586	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIB		
No.800	PI 505587	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.801	PI 505588	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.802	PI 505589	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.803	PI 505591	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.804	PI 505592	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		Y
No.805	PI 505593	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.806	PI 505594	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		
No.807	PI 505595	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia	Pop II	Pop IIA		Y
No.808	PI 505604	<i>C. ananrus</i>	Zambia	Pop II	Pop IIB		Y
No.809	PI 507858	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop I	Pop IA		
No.810	PI 507862	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop II	Pop IIA		
No.811	PI 507863	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop II	Pop IIA		
No.812	PI 507864	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop II	Pop IIA		
No.813	PI 507865	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop II	Pop IIA		
No.814	PI 507866	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop II	Pop IIA		
No.815	PI 507867	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Admixture	Admixture		
No.816	PI 507868	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.817	PI 507869	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Hungary	Pop I	Pop IA		
No.818	PI 508441	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Admixture	Admixture		Y
No.819	PI 508442	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Admixture	Admixture		
No.820	PI 508443	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Admixture	Admixture		
No.821	PI 508444	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Pop I	Pop IA	Y	
No.822	PI 508445	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Admixture	Admixture		
No.823	PI 508446	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea	Admixture	Admixture		
No.824	PI 512332	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.825	PI 512339	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.826	PI 512340	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		Y
No.827	PI 512341	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.828	PI 512342	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.829	PI 512343	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop I admixed		
No.830	PI 512348	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.831	PI 512349	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop IA		
No.832	PI 512351	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.833	PI 512352	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.834	PI 512353	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.835	PI 512356	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.836	PI 512359	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		Y
No.837	PI 512362	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.838	PI 512364	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.839	PI 512366	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.840	PI 512368	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		Y
No.841	PI 512369	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.842	PI 512370	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop IA		
No.843	PI 512376	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop I admixed		
No.844	PI 512378	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.845	PI 512379	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.846	PI 512381	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		Y
No.847	PI 512382	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.848	PI 512383	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop I admixed		
No.849	PI 512384	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.850	PI 512385	<i>C. amarus</i>	Spain	Pop II	Pop IIA		
No.851	PI 512386	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.852	PI 512389	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.853	PI 512391	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		Y
No.854	PI 512392	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.855	PI 512395	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture	Y	
No.856	PI 512396	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop IA		
No.857	PI 512397	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.858	PI 512398	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.859	PI 512400	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.860	PI 512401	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop I	Pop IA		
No.861	PI 512402	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.862	PI 512403	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop I admixed		
No.863	PI 512404	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA		
No.864	PI 512405	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA	Y	
No.865	PI 512828	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Pop II	Pop IIA	Y	Y
No.866	PI 518606	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Russian Federation	Admixture	Admixture		
No.867	PI 518611	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Former Soviet Union	Admixture	Admixture		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.868	PI 519612	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Chile	Admixture	Admixture		
No.869	PI 525084	<i>C. mucosopermus</i>	Egypt	Admixture	Admixture	Y	
No.870	PI 525087	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.871	PI 525088	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.872	PI 525090	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.873	PI 525091	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Pop I	Pop IA		
No.874	PI 525094	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.875	PI 525096	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.876	PI 525097	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Pop II	Pop IIA		
No.877	PI 525098	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.878	PI 525099	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Egypt	Admixture	Admixture		
No.879	PI 532659	<i>C. ananrus</i>	South Africa	Pop II	Pop IIB		
No.880	PI 534586	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Pop II	Pop IIA		
No.881	PI 534587	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Pop II	Pop IIA		
No.882	PI 534588	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Admixture	Admixture		
No.883	PI 534589	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Admixture	Admixture		
No.884	PI 534591	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Pop II	Pop IIA		Y
No.885	PI 534592	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Admixture	Admixture		
No.886	PI 534593	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Pop II	Pop IIA		
No.887	PI 534595	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Pop II	Pop IIA		
No.888	PI 534596	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Admixture	Admixture		Y
No.889	PI 534597	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Syria	Admixture	Admixture		
No.890	PI 536451	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Admixture	Admixture		Y
No.891	PI 536452	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Pop I	Pop IA		
No.892	PI 536453	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Pop I	Pop IA		
No.893	PI 536457	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Pop I	Pop IA		
No.894	PI 536458	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Pop I	Pop IA		Y
No.895	PI 536459	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Admixture	Admixture		
No.896	PI 536460	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Pop I	Pop IA		
No.897	PI 536462	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Pop I	Pop IA		
No.898	PI 536464	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Maldives	Admixture	Admixture		Y
No.899	PI 537265	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Pop II	Pop IIA		
No.900	PI 537270	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Admixture	Admixture		
No.901	PI 537273	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Pakistan	Pop II	Pop IIA		
No.902	PI 537467	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.903	PI 537470	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain	Admixture	Admixture		
No.904	PI 542617	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Algeria	Pop II	Pop IIA	Y	Y
No.905	PI 543212	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Bolivia	Pop I	Pop IA		
No.906	PI 559992	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Nigeria	Pop II	Pop IIA		
No.907	PI 559999	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Nigeria	Pop II	Pop IIA		
No.908	PI 561138	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Kazakhstan	Admixture	Admixture		Y
No.909	PI 595201	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.910	BVCIT 44	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Jugoslavian	Admixture	Admixture		
No.911	Burpees Fordhook Early	<i>C. lanatus</i> subsp. <i>vulgaris</i>	unbekannt	Pop II	Pop IIA	Y	
No.912	BVCIT 53	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ukraine	Pop II	Pop IIA		
No.913	BVCIT 66	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Italien	Admixture	Admixture	Y	
No.914	BVCIT 68	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Italien	Pop II	Pop IIA		
No.915	BVCIT 69	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Italien	Pop II	Pop IIA		
No.916	M.P.de Bulgarie	<i>C. lanatus</i> subsp. <i>vulgaris</i>	unbekannt	Pop II	Pop IIA		
No.917	Mozaicnyj	<i>C. lanatus</i> subsp. <i>vulgaris</i>	RuBland	Pop II	Pop IIA	Y	
No.918	Arcarski	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Bulgarien	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.919	Arcarska Podobrena	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Bulgarien	Pop II	Pop IIA		
No.920	Sibirjak	<i>C. lanatus</i> subsp. <i>vulgaris</i>	RuPland	Pop II	Pop IIA		
No.921	Giza 1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ägypten	Pop II	Pop IIA	Y	
No.922	BVCIT 167	<i>C. amarus</i>	Koreanische DVR	Pop II	Pop IIB		
No.923	BVCIT 183	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Mongolei	Pop II	Pop IIA		
No.924	Navajo Red Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.925	L-5	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.926	Settle No.2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.927	Spotted Watson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.928	Black Diamond	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.929	Chris Cross	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.930	Odham Yellow	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.931	Lopride	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.932	BVCIT 303	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Türkei	Pop II	Pop IIA		
No.933	BVCIT 304	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Türkei	Pop II	Pop IIA		
No.934	BVCIT 306	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Portugal	Pop II	Pop IIA		
No.935	Seychelles	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Südafrika	Pop II	Pop IIB	Y	
No.936	BVCIT 315	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Portugal	Pop II	Pop IIA		
No.937	BVCIT 11	<i>C. amarus</i>	unbekannt	Pop II	Pop IIB		
No.938	Brodskij	<i>C. amarus</i>	RuPland	Pop II	Pop IIB		
No.939	BVCIT 91	<i>C. amarus</i>	unbekannt	Pop II	Pop IIB	Y	
No.940	CAPRIV	<i>C. amarus</i>	Südafrika	Pop II	Pop IIB		
No.941	Wild Tasmna	<i>C. amarus</i>	Südafrika	Pop II	Pop IIB		
No.942	Saldanha	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Südafrika	Admixture	Admixture		
No.943	BVCIT 149	<i>C. amarus</i>	Zambia	Pop II	Pop IIB		
No.944	Ho Red	<i>C. lanatus</i> subsp. <i>vulgaris</i>	unbekannt	Pop II	Pop IIA		
No.945	Market Midget	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.946	BVCIT 58	<i>C. amarus</i>	unbekannt	Pop II	Pop IIB		
No.947	BVCIT 79	<i>C. amarus</i>	unbekannt	Pop II	Pop IIB		
No.948	BVCIT 84	<i>C. amarus</i>	unbekannt	Pop II	Pop IIB		
No.949	BVCIT 92	<i>C. amarus</i>	unbekannt	Pop II	Pop IIB		
No.950	Azovskij	<i>C. amarus</i>	Ukraine	Pop II	Pop IIB		
No.951	BVCIT 162	<i>C. amarus</i>	Libyen	Pop II	Pop IIB		
No.952	Bibete	<i>C. amarus</i>	Kongo	Pop II	Pop II admixed		
No.953	Parbuz(tadz.)	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Tadschikistan	Pop II	Pop IIA		
No.954	Black Seeded No.1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Türkei	Pop II	Pop IIA		
No.955	Tan Seeded	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Türkei	Pop II	Pop IIA		
No.956	Malali	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Israel	Pop II	Pop IIA		
No.957	Navajo Red Seeded	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.958	Xinnofu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.959	Hong lhaio	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.960	Wuchazao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture	Y	
No.961	Zaohua	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.962	K7	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.963	Sanbai	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.964	Xinbai91-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop I admixed		
No.965	Heibenjin	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.966	Dul hao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.967	Guiyin6hao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.968	Yinv	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.969	Changhui	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.970	Kelunsheng	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.971	Zhengz96b90	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.972	Zhongyul0hao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.973	2000-S52	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.974	Mibao-X	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.975	Heimxuanxi-X	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.976	Tomato-Seed-X	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.977	2000-203	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.978	Japduanman	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.979	BV783	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.980	BV784	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.981	BV785	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.982	BV786	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.983	BV796	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture	Y	
No.984	BV797	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.985	BV728	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.986	BV729	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.987	BV761	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.988	BV731	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.989	BV735	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.990	BV736	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.991	BV740	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.992	BV742	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.993	BV748	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.994	BV776	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.995	Tom Watson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.996	Florida Giant	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.997	Kleckley's Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.998	Klondike Blue Ribbon Stripe	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.999	Mountain Hoosier	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1000	Charleston Gray No.133	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1001	Early Crimson Treat	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1002	Will's Sugar	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1003	Greybelle	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1004	Orange Flesh Tendersweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1005	Yellow Desert King	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1006	Grif 16376	<i>C. rehmlii</i>	France	Pop II	Pop IIB		
No.1007	PI 632751	<i>C. ecirrhosus Cogn</i>	United States	Pop II	Pop IIB	Y	
No.1008	PI 195927	<i>C. colocynthis</i>	Ethiopia	Pop II	Pop II admixed	Y	
No.1009	PI 220778	<i>C. colocynthis</i>	Ethiopia	Pop II	Pop IIB	Y	
No.1010	PI 386024	<i>C. colocynthis</i>	Iran	Pop II	Pop II admixed	Y	
No.1011	PI 432337	<i>C. colocynthis</i>	Cyprus	Pop II	Pop IIB	Y	
No.1012	PI 537300	<i>C. colocynthis</i>	Turkmenistan	Pop II	Pop IIB	Y	
No.1013	PI 525082	<i>C. colocynthis</i>	Egypt	Pop II	Pop IIB	Y	
No.1014	PI 652554	<i>C. colocynthis</i>	India	Pop II	Pop IIB	Y	
No.1015	Skorospelka Char'Kovskaja	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Cyprus	Pop II	Pop IIA	Y	
No.1016	Mramorna Nr.17	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop II admixed		
No.1017	BVCIT 146	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1018	San Juan Pueblo Mixed	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1019	Habhab Hamra	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1020	PI 482246	<i>C. ananrus</i>	United States	Pop II	Pop II admixed		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F1.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.1021	PI 186975	<i>C. mucospermus</i>	Ghana	Pop II	Pop IIA		
No.1022	PI 559993	<i>C. mucospermus</i>	United States	Pop II	Pop II admixed		
No.1023	PI 559995	<i>C. mucospermus</i>	United States	Pop II	Pop II admixed		
No.1024	BVV42	<i>C. mucospermus</i>	China	Pop I	Pop IA		
No.1025	BVV43	<i>C. mucospermus</i>	China	Admixture	Admixture	Y	
No.1026	BVV44	<i>C. mucospermus</i>	China	Admixture	Admixture	Y	
No.1027	BVV45	<i>C. mucospermus</i>	China	Admixture	Admixture		
No.1028	BVV46	<i>C. mucospermus</i>	China	Pop I	Pop IA		
No.1029	K39	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.1030	KWS-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1031	L600L-L600	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.1032	ZRY	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.1033	L600Y-L600	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1034	KP-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1035	KLL-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1036	K509	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.1037	DXBY-5	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.1038	TS409	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.1039	KH-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1040	HPF	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.1041	YH	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.1042	KH3-1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1043	GK5F	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.1044	JC5F	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.1045	GLX1F	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.1046	Arka Manik	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.1047	WDM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.1048	TDM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1049	Criom Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.1050	Jingxue	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB		
No.1051	Meigbairoui	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA	Y	
No.1052	CYM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1053	BW	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.1054	SP5	<i>C. mucospermus</i>	China	Pop I	Pop IA	Y	
No.1055	YDKBFEN	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IA		
No.1056	SL3	<i>C. mucospermus</i>	China	Admixture	Admixture	Y	
No.1057	AZKZW	<i>C. mucospermus</i>	China	Admixture	Admixture	Y	
No.1058	Ali Baba	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		
No.1059	Arkansas Black	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1060	Au-Golden Producer	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1061	Au-Jubilant	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1062	Baby Klondike	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1063	Black Diamond Yellow Belly Strain	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1064	Black Diamond Yellow Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1065	Black Seeded Ice Cream	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1066	Blacktail Mountain	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1067	Blue Rind	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1068	Bush Charleston Gray	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1069	Bush Jubilee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1070	Calhoun Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1071	Carolina Cross	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F₁.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.1072	Charlee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.1073	Charleston 76	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1074	Charleston Elite	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1075	Charleston Gray	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1076	Chelsea	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1077	Coles Early	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1078	Colorado Preserving	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIB		
No.1079	Congo	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1080	Crimson Diamond	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1081	Cutter 55	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1082	Daisy Or Yellow Shipper	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1083	Desert King	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1084	Domok	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1085	Eureka	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1086	Fairfax	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1087	Fairfax Wilt Resistant	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1088	Florida Favorite	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1089	Georgia Rattlesnake	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1090	Golden Midget	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1091	Golden Russian	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1092	Graybelle	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1093	Halbert Honey	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1094	Hawkesbury Wilt Resistant	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1095	Irish Grey	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1096	Ironsides	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1097	Japanese Cream Fleshed Suika	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IB		
No.1098	Jimmy	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1099	Jubilee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1100	Juliett	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1101	Kengarden	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1102	Kleckley Sweet, Burrells Improved	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1103	Klondike Black Seeded	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1104	Klondike Blue Ribbon Striped	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1105	Klondike R 7	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1106	Kolb's Gem Or American Cham On	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1107	Ledmon	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1108	Leesburg	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1109	Lisa	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1110	Long Crimson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1111	Long Milky Way	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1112	Louisiana Queen	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1113	Louisiana Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1114	Market Wonder	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1115	Melitopolski	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1116	Merrimack Sweetheart	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IB		
No.1117	Miles	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1118	Minilee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1119	Missouri Heirloom Yellow Flesh	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1120	Mountain Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1121	Mountain Sweet Yellow	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1122	New Hampshire Midget	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F1.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.1123	Orangeleglo	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1124	Osh Kirgizia	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1125	Peacock Improved Shipper	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1126	Peacock Striped	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1127	Peacock Wr-50	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1128	Purdue Hawkesberry	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1129	Royal Golden	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1130	Scaly Bark	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1131	Shipper	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1132	Small Shining Light	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1133	Smokylee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1134	Spalding	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1135	Stone Mountain	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1136	Sugar Bush	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1137	Summer field	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1138	Sun Gold	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1139	Sun shade	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1140	Sun sugar	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1141	Super Sweet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1142	Sweet Princess	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1143	Sweet Siberian	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1144	Sweet Treat	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1145	Takii Gem	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop I admixed		
No.1146	Tastigold	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA		
No.1147	Texas Golden	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1148	Thai Rom Dao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1149	Verona	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1150	White Hope	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1151	White Seeded Watson	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1152	White Sugar Lump	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		
No.1153	White Wonder	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1154	Will's Sugar	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop I	Pop IA		
No.1155	PI 635686	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Admixture	Admixture		Y
No.1156	CXG	<i>Citrullus naudinianus</i>	China	Pop II	Pop IIB		Y
No.1157	GR25	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		Y
No.1158	GR36	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		Y
No.1159	GR63	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		Y
No.1160	GR88	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		Y
No.1161	ZG80	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		Y
No.1162	ZG85	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		Y
No.1163	PI 549161	<i>C. colocynthis</i>	Chad	Pop II	Pop IIB		Y
No.1164	PI 632755	<i>C. rehmi</i>	Sleigh	Pop II	Pop IIB		Y
No.1165	F10	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA		Y
No.1166	PI 386015	<i>C. colocynthis</i>	Iran	Pop II	Pop IIB		Y
No.1167	PI 388770	<i>C. colocynthis</i>	Morocco	Pop II	Pop IIB		Y
No.1168	14S361	<i>C. mucospermus</i>	China	Pop II	Pop IIB		Y
No.1169	14S512	<i>C. mucospermus</i>	China	Admixture	Admixture		Y
No.1170	PI 189316	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Admixture	Admixture		
No.1171	PI 482312	<i>C. amarus</i>	Nigeria	Pop II	Pop IIB		
No.1172	PI 482259	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB		
No.1173	97103	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IIB		Y

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Supplemental Table 1. (Continued) List of the 1197 watermelon accessions used in the present study. The groups (Pop I and Pop II) and subgroups (Pop IA, Pop IB, Pop IIA, and Pop IIB) for these accessions were noted as well as the accession species. Of these accessions, those chosen as the core set and American core set were recorded as “Y”. Hybrids were denoted with F1.

No.	Name of line (F ₁)	Species	Accession origin	Group assignment	Subgroup assignment	Core set	American core set
No.1174	RZ-900	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Netherlands	Pop II	Pop IIA	Y	
No.1175	RZ-901	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Netherlands	Pop I	Pop IB	Y	
No.1176	Sugarlee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop II	Pop IIA	Y	
No.1177	JX-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1178	JLM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1179	JXF	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1180	XHBFGM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China	Pop I	Pop IB	Y	
No.1181	Calhoun Gray	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.1182	Black Diamond	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.1183	PI 296341-FR	<i>C. amarus</i>	South Africa	Pop II	Pop IIB	Y	Y
No.1184	PI 595203	<i>C. mucospermus</i>	Nigeria	Pop II	Pop IIA	Y	
No.1185	PI 386019	<i>C. colocynthis</i>	South Africa	Pop II	Pop IIB	Y	
No.1186	PI 482271	<i>C. mucospermus</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.1187	PI 482303	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.1188	PI 482276	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIA	Y	
No.1189	SY-904304	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States	Pop II	Pop IIA	Y	
No.1190	PI 249010	<i>C. mucospermus</i>	Nigeria	Pop II	Pop IIA	Y	
No.1191	PI 248178	<i>C. mucospermus</i>	Zaire	Pop II	Pop IIA	Y	
No.1192	PI 189317	<i>C. mucospermus</i>	Nigeria	Pop II	Pop IIA	Y	Y
No.1193	PI 500301	<i>C. mucospermus</i>	Zambia	Pop II	Pop IIA	Y	Y
No.1194	PI 482326	<i>C. amarus</i>	Zimbabwe	Pop II	Pop IIB	Y	
No.1195	PI 618817	<i>C. naudinianus</i>	South Africa	Pop II	Pop IIB	Y	
No.1196	PI 671961	<i>C. naudinianus</i>	South Africa	Pop II	Pop IIB	Y	
No.1197	Grif 16945	<i>C. ecirrhosus</i> Cogn	United States	Pop II	Pop IIB	Y	

Supplemental Table 2. List of the 130 accessions of the core collection. This core set was able to capture all 133 alleles detected by 23 SSRs in 1197 accessions.

No.	Accession name	Species	Accession origin
No.1	98r	<i>Citrullus lanatus</i> subsp. <i>vulgaris</i>	China
No.2	Zzjm	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.3	917	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.4	302	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.5	Au-Sweet-Scarlet	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.6	Shezt	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.7	T2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.8	C2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.9	Xin102	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.10	Lanfu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.11	Sd	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.12	Sugar Baby	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.13	Moon and Stars	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.14	PI 164687	<i>C. mucosospermus</i>	India
No.15	PI 169300	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Turkey
No.16	PI 179878	<i>C. mucosospermus</i>	India
No.17	PI 181742	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Lebanon
No.18	PI 234603	<i>C. lanatus</i> subsp. <i>vulgaris</i>	New Zealand
No.19	PI 254740	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Senegal
No.20	PI 270144	<i>C. mucosospermus</i>	Greece
No.21	PI 270524	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Israel
No.22	PI 270545	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Sudan
No.23	PI 271773	<i>C. amarus</i>	South Africa
No.24	PI 273479	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia
No.25	PI 273481	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ethiopia
No.26	PI 296337	<i>C. amarus</i>	South Africa
No.27	PI 392291	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Kenya
No.28	PI 435991	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.29	PI 482255	<i>C. mucosospermus</i>	Zimbabwe
No.30	PI 482286	<i>C. amarus</i>	Zimbabwe
No.31	PI 482307	<i>C. amarus</i>	Zimbabwe
No.32	PI 482319	<i>C. amarus</i>	Zimbabwe
No.33	PI 482324	<i>C. amarus</i>	Zimbabwe
No.34	PI 482331	<i>C. amarus</i>	Zimbabwe
No.35	PI 482378	<i>C. mucosospermus</i>	Zimbabwe
No.36	PI 505586	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Zambia
No.37	PI 508444	<i>C. lanatus</i> subsp. <i>vulgaris</i>	South Korea
No.38	PI 512332	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.39	PI 512395	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain
No.40	PI 512404	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain
No.41	PI 512405	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Spain
No.42	PI 525084	<i>C. mucosospermus</i>	Egypt
No.43	PI 542617	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Algeria
No.44	Burpees Fordhook Early	<i>C. lanatus</i> subsp. <i>vulgaris</i>	unbekannt
No.45	BVCIT 66	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Italien
No.46	Mozaicnyj	<i>C. lanatus</i> subsp. <i>vulgaris</i>	RuPland
No.47	Giza 1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Ägypten
No.48	L-5	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.49	Black Diamond Yellow Belly	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.50	BVCIT 306	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Portugal
No.51	BVCIT 91	<i>C. amarus</i>	unbekannt
No.52	Xinmofu	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.53	Wuchazao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.54	Sanbai	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.55	Heibenjin	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.56	Guiyin6hao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.57	Zhongyu10hao	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.58	Mibao-X	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.59	Tomato-Seed-X	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.60	Japduanman	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.61	BV786	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.62	BV797	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.63	BV761	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.64	BV740	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.65	BV748	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.66	PI 632751	<i>C. ecirrhosus</i> Cogn	United States
No.67	PI 195927	<i>C. colocynthis</i>	Ethiopia
No.68	PI 220778	<i>C. colocynthis</i>	Ethiopia
No.69	PI 386024	<i>C. colocynthis</i>	Iran
No.70	PI 432337	<i>C. colocynthis</i>	Cyprus
No.71	PI 537300	<i>C. colocynthis</i>	Turkmenistan
No.72	PI 525082	<i>C. colocynthis</i>	Egypt
No.73	PI 652554	<i>C. colocynthis</i>	India
No.74	Skorospelka Char'Kovskaja	<i>C. lanatus</i> subsp. <i>Vulgaris</i>	Cyprus

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Supplemental Table 2. (Continued) List of the 130 accessions of the core collection. This core set was able to capture all 133 alleles detected by 23 SSRs in 1197 accessions.

No.	Accession name	Species	Accession origin
No.75	BVV43	<i>C. mucosospermus</i>	China
No.76	BVV44	<i>C. mucosospermus</i>	China
No.77	KWS-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.78	L600Y- L600	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.79	KP-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.80	KLL-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.81	TS409	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.82	KH-K	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.83	KH3-1	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.84	GK5F	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.85	Arka Manik	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.86	WDM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.87	TDM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.88	Meigbairoui	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.89	CYM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.90	SP5	<i>C. mucosospermus</i>	China
No.91	SL3	<i>C. mucosospermus</i>	China
No.92	AZKZW	<i>C. mucosospermus</i>	China
No.93	Charlee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.94	CXG	<i>C. naudinianus</i>	China
No.95	GR25	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.96	GR36	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.97	GR63	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.98	GR88	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.99	ZG80	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.100	ZG85	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.101	PI 549161	<i>C. colocynthis</i>	Chad
No.102	PI 632755	<i>C. rehmi</i>	Sleigh
No.103	F10	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.104	PI 386015	<i>C. colocynthis</i>	Iran
No.105	PI 388770	<i>C. colocynthis</i>	Morocco
No.106	97103	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.107	RZ-900	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Netherlands
No.108	RZ-901	<i>C. lanatus</i> subsp. <i>vulgaris</i>	Netherlands
No.109	Sugarlee	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.110	JX-2	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.111	JLM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.112	JXF	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.113	XHBFGM	<i>C. lanatus</i> subsp. <i>vulgaris</i>	China
No.114	Calhoun Gray	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.115	Black Diamond	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.116	PI 296341-FR	<i>C. amarus</i>	South Africa
No.117	PI 595203	<i>C. mucosospermus</i>	Nigeria
No.118	PI 386019	<i>C. colocynthis</i>	South Africa
No.119	PI 482271	<i>C. mucosospermus</i>	Zimbabwe
No.120	PI 482303	<i>C. amarus</i>	Zimbabwe
No.121	PI 482276	<i>C. amarus</i>	Zimbabwe
No.122	SY-904304	<i>C. lanatus</i> subsp. <i>vulgaris</i>	United States
No.123	PI 249010	<i>C. mucosospermus</i>	Nigeria
No.124	PI 248178	<i>C. mucosospermus</i>	Zaire
No.125	PI 189317	<i>C. mucosospermus</i>	Nigeria
No.126	PI 500301	<i>C. mucosospermus</i>	Zambia
No.127	PI 482326	<i>C. amarus</i>	Zimbabwe
No.128	PI 618817	<i>C. naudinianus</i>	South Africa
No.129	PI 671961	<i>C. naudinianus</i>	South Africa
No.130	Grif 16945	<i>C. ecirrhosus</i> Cogn	United States