

Reviews

Summer Squash: History, Diversity, and Distribution

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Summary. Summer squash (*Cucurbita pepo* L.) is grown in many temperate and subtropical regions, ranking high in economic importance among vegetable crops worldwide. A native of North America, summer squash has been grown in Europe since the Renaissance. There are six extant horticultural groups of summer squash: cocozelle, crookneck, scallop, straightneck, vegetable marrow, and zucchini. Most of these groups have existed for hundreds of years. Their differing fruit shapes result in their differential adaptations to various methods of culinary preparation. Differences in flavor, while often subtle, are readily apparent in some instances. The groups differ in geographical distribution and economic importance. The zucchini group, a relatively recent development, has undergone intensive breeding in the United States and Europe and is probably by far the most widely grown and economically important of the summer squash.

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Summer squash are the edible young (several days past anthesis) fruit of *Cucurbita pepo*, a highly diverse species. An easy-to-grow, short-season crop, summer squash is adapted to temperate and subtropical climates and is grown in many regions. According to FAO statistics (Fruit and Vegetable Markets, 1992), the worldwide production of summer squash exceeded 6,300,000 metric tons per annum during the late 1980s. More recent figures from a variety of regional and local reports indicate that production and per capita consumption of summer squash have risen sharply during the past decade. Not only has the cultivation of summer squash expanded markedly in countries in which the crop is familiar, it also has spread to regions where heretofore summer squash was either a minor crop or not grown. While the United States and Mexico, the two countries to which *C. pepo* is native, are two of the largest producers of summer squash, the countries of the Mediterranean and Middle East, led by Turkey, Italy, and Egypt, are responsible for one-third of the world's production. A conservative estimate of the worldwide value of the summer squash crop is several billion dollars annually, therefore, summer squash ranks high in economic importance among vegetable crops.

The immature fruit of various cucurbits have been used for culinary purposes indifferent parts of the world. Consumption of immature *C. pepo* fruit was probably not the first use of this species when it was domesticated thousands of years ago. Nonetheless, the culinary use of young *C. pepo* fruit is an ancient practice (Cutler and Whitaker, 1961). Fruit larger and more mature than those we refer to today as summer

squash may have been consumed initially. To this day, fruit that appear to have been harvested between 1 and 2 weeks after anthesis can be found in markets in Mexico.

Summer squash are picked when they are shiny, up to 1 week after anthesis. Dull fruit are generally unsalable. Although summer squash can be harvested over a wide range of sizes, from <50 g to >400 g, the acceptable size range is a function of the market demand, which is in turn a function of the interaction of fruit shape with the preferred methods of culinary preparation used by the consumers of the region. The acceptable size range can be quite narrow, and it differs among markets.

Cucurbita, a New World genus (Whitaker, 1947) of the gourd family, Cucurbitaceae, contains five cultivated species. *Cucurbita pepo* is the most diverse of these species, consisting of wild forms in the United States and Mexico previously classified as separate species, *C. texana* Gray and *C. fraterna* Bailey, respectively, as well as many of the pumpkins and ornamental gourds, the acorn squash, and summer squash.

Various terms have been used interchangeably for the many forms of *C. pepo*, but the uses of these terms often have not been faithful to the original meanings. This has resulted in some confusion, which hopefully can be reduced or resolved here.

The term pumpkin is rooted in a Greek and Latin word for a large, round fruit, whereas squash comes from the plural form of a native North American word for something immature or incomplete. Therefore, the term pumpkin is to be applied to edible *Cucurbita* fruit that are round or nearly round (spherical, oval, obovate, globe, flat globe, oblate, flat oblate, etc.), whereas the term squash should be applied to edible *Cucurbita* fruit deviating greatly from roundness. With the exceptions described later, pumpkins almost always are consumed when mature. All *C. pepo* squash, except for acorn squash and a few unique cultivars such as 'Delicata', are consumed when immature.

The term zucchini is the diminutive plural of the Italian *zucca* for pumpkin, squash, or gourd. Zucchini applies to cylindrically shaped fruit, similar to those of the original cultivars bearing the name zucchini (Tapley et

Table 1. Extant horticultural groups of summer squash (Paris, 1986).

Group	Fruit shape
Scallop	Flattened, with scalloped margins
Crookneck	Elongated, with narrow, long, slightly to very curved neck, broad distal half, convex distal end
Straightneck	Cylindrical, with short neck or constriction near the stem end and a broad distal half, convex or pointed distal end
Vegetable	Short, tapered, cylindrical, narrow at stem end, marrow broad at distal end, length-to-broadest width ratio ranging ii-em 1.5 to 3.0
Cocozelle	Long to extremely long slightly tapered cylindrical, bulbous near blossom end, length-to-broadest width ratio ranging from 3.5 to 8.0 or even higher
zucchini	Uniformly cylindrical, little or no taper, length-to-broadest width ratio usually from 3.5 to 4.5

al., 1937). The term cocozelle is the diminutive of cocuzza, which itself is an Italian dialect inversion of zucca. Cocuzza applies to the extremely long-fruited forms of *Lagenaria*, which are used in Sicily and other parts of Italy for culinary purposes when young, about 50 cm long (Bianchini and Corbetta, 1976). Cocozelle applies to long fruit of lesser dimensions. The term marrow is used for edible *C. pepo* fruit about 2 weeks past anthesis. It was a 19th-century English custom to eat fruit of this age, and the term marrow is perhaps in allusion to bone marrow (Stuart, 1987). The term vegetable marrow is the ii-all, original name for marrow. I prefer to reserve vegetable marrow for referring to summer squash forms having fruit of the short, tapered cylindrical shape similar to that of the English forms that were used as marrows.

Perhaps in the Cucurbitaceae in general, more so in the genus *Cucurbita*, and very definitely so in *C. pepo*, there is an association between the length-to-width ratio and the stage of development at which the fruit is used for culinary purposes (Paris, 1989). Pumpkins as well as acorn squash have a near 1:1 length-to-width ratio and, with certain exceptions, are consumed when mature. Vegetable marrows deviate from this ratio, originally being used when about half-grown. Zucchini, which deviate more, are used only when young. Cocozelles, which deviate even more, are used when young or very young, with the corolla still attached. Similarly, straightneck, crookneck, and scallop squash, which also deviate noticeably from the 1:1 ratio, are used only when young. Apparently, this trend toward deviation from the 1:1 ratio stems from the desire for more of the colored exocarp and firm mesocarp tissue and less of the soft, pulpy interior of developing seeds and placenta.

On the basis of genetic relationships, *C. pepo* has been subdivided into two subspecies, *pepo arid ovifera*, the former appearing to be associated with a Mexican origin and the latter with an origin in the eastern half of the United States (Decker, 1988). Six extant horticultural groups of summer squash have been recognized on the basis of fruit shape (Paris, 1986; Table 1; Fig. 1). Of these six, the vegetable marrow, cocozelle, and zucchini groups can be assigned to subspecies *pepo* and the scallop, crookneck, and straightneck groups to subspecies *ovifera*.

Their distinct fruit shapes allow the summer squash groups to be identified easily in even some of the earliest illustrated botanical works. Much of the early historical record of *Cucurbita* is indeed from botanical herbals (Paris, 1989). One of the most noteworthy of these tomes, because of the abundance of realistic, quality illustrations of various forms and therefore perhaps best summarizing the Renaissance depictions of *C. pepo*, is the compilation of Chabrey (1666). As all forms

of *C. pepo* are pollinated by bees, cross with one another freely, and produce fully fertile offspring, it is amazing that most of the summer squash groups have maintained their identity for hundreds of years.

In the scallop group (syn. 'Patty Pan', 'Custard', 'Cymling', 'Patisson', 'Button'), the fruit are flat, with scalloped margins (Fig. 2). The history of this group in Europe dates to the middle of the 16th century (Paris, 1989). The scallop was represented by at least three distinct forms, one of which was the 'Golden Bush Scallop' cultivar or very similar form. The two others were vining forms having fruit resembling those of the 'Yellow Bush Scallop' and 'White Bush Scallop' cultivars. The use of immature *C. pepo* by native Americans of the Atlantic Coast was described in the mid-17th cen-

Fig. 1. An array of summer squash fruit arranged according to the six extant horticultural groups. Left to right top row: cocozelle, crookneck, scallop; bottom row: straightneck, vegetable marrow, zucchini.

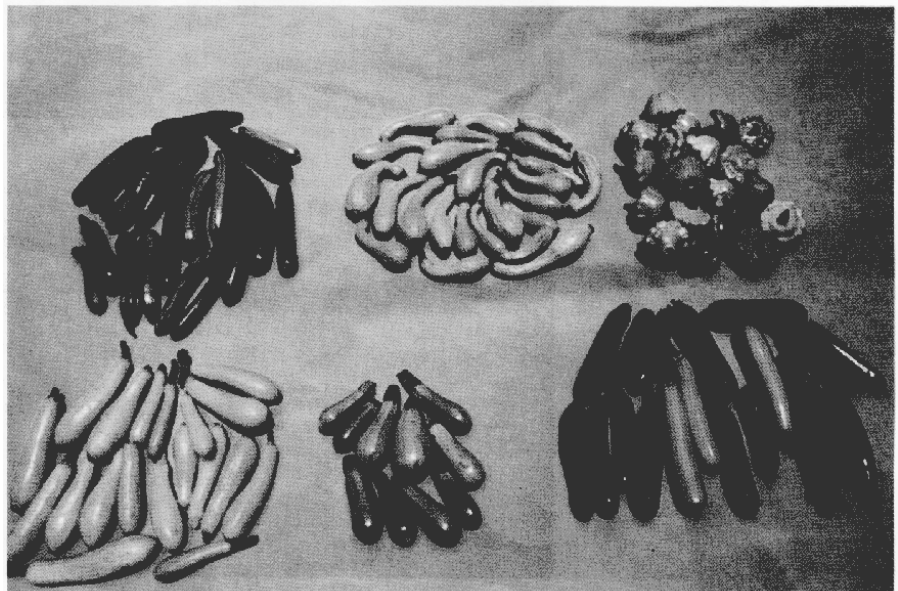


Fig. 2. Scallop squash. Top left, five yellow, striped fruit of 'Golden Bush Scallop'; top right three yellow fruit of 'Yellow Bush Scallop'; between them, three intensely yellow fruit (with intense green ring around the blossom scar) of 'Sunburst'; bottom left and center, seven light green fruit (with faint hint of yellow stripes) of 'Benning's Green Tint'; at the 4 o'clock position, two pale green fruit of 'White Bush Scallop'.



Fig. 3. Crookneck squash. Two fruit each, left to right (top row) of 'Pavo', 'Early Yellow Crookneck', and 'Dixie' and (bottom row) 'Yellow Summer Crookneck', 'Superset', 'Ranger', and 'Pic-n-pic'.



Fig. 4. Straightneck squash. Two fruit each, left to right (top row) of 'Creamy', 'Early Prolific Straightneck', and 'Golden Girl' and (bottom row) 'Goldzini', 'Lemondrop', and 'Multipik'.

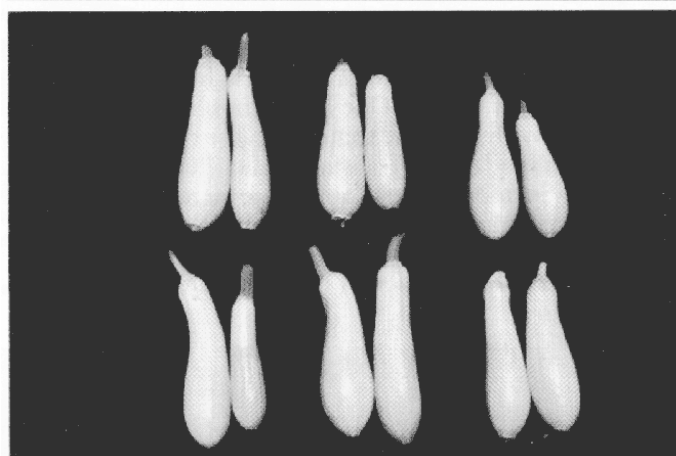
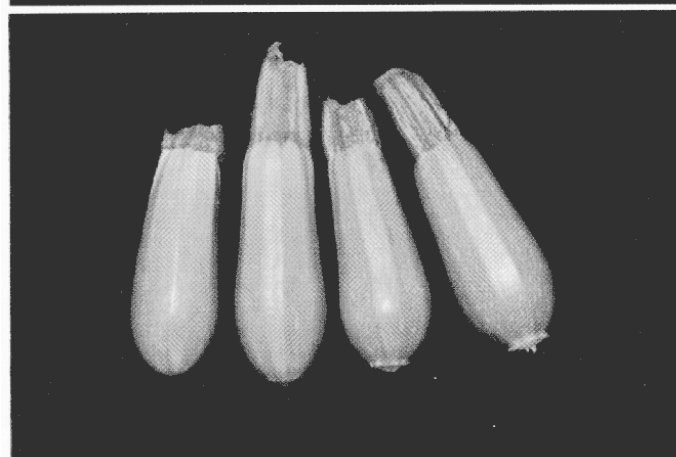


Fig. 5. Vegetable marrow squash. One fruit each, left to right, of 'Bar 'Oz', 'Beirut', 'Clarita', and 'Katia'.



tury. During the 18th century, native Americans of the coast and the interior reportedly used the scallop squash when immature, whereas other forms of *Cucurbita* were used or stored when mature. The scallop squash was familiar to the most famous of early American gardeners, Thomas Jefferson (Betts, 1944). From the early 19th century, scallop squash are mentioned more or less continually in gardening literature of Europe and North America. Scallop squash had economic importance along the Atlantic coast of the United States until about 70 years ago, but since then appear to have been largely replaced by other groups. presently, this group has commercial importance in Australia, where it is known as button squash. For many years, the more familiar scallop squash fruit were pale green in color, but yellow scallops appear today to be increasing in popularity. It is becoming more and more difficult to obtain seeds of the old open-pollinated cultivars such as 'Benning's Green Tint', 'Golden Bush Scallop', 'White Bush Scallop', and 'Yellow Bush Scallop'. It is much easier to obtain seeds of the modern hybrids, 'Peter Pan' and 'Sunburst', as these are offered by many seed companies.

In the crookneck group, the fruit are elongated with a slim, long, slightly to very curved neck, and a broad distal half of the fruit, with a convex distal end (Fig. 3). Typically, the fruit are light yellow, but as they mature they become intense orange and highly warted. These are not to be confused with the so-

called winter crookneck, which belong to *C. moschata* (Duch. ex Lam.) Duch. ex Poir., nor with the cushaws, most of which belong to *C. argyrosperma* Huber. An illustration of the *C. pepo* crookneck appeared in several German botanical tomes of the 17th century, but as the illustration contains a plant and plant parts of other cucurbit genera, it appears to be of 16th-century style. The earliest record known to me from the United

States is from the letter of T. Matlack to Jefferson in February 1807: "The long crooked & warted Squash—a native of New Jersey, which the Cooper's family have preserved and cultivated for a near century. It is our best Squash" (Betts, 1944). According to Sturtevant (1890), the 'Summer Crookneck' cultivar first appeared in a North American seed catalog in 1828, and many other references were soon to follow in the United States and Europe. Two crookneck cultivars were known to Naudin (1856), one of viney growth and having large fruit and the other of bushy growth and having small fruit; the fruit of both were yellow and highly warted. The crookneck have a characteristically distinct,

strong flavor. At present, the crookneck is the predominant summer squash group in the southeastern United States. Several distinct open-pollinated cultivars, sold under the names 'Early Yellow Crookneck', 'Early Summer Crookneck', and 'Yellow Summer Crookneck', are still in commerce but most extant cultivars are hybrids, some of the more familiar ones being 'Dixie', 'Pave', and 'Tara'. 'Dixie' has been a leading cultivar since its release in 1966.

In the straightneck group, the fruit are cylindrical with a short neck or constriction near the stem end and a broad distal half of the fruit with a convex and more or less pointed distal end (Fig. 4). The fruit of all cultivars are light yellow, but as they mature they become medium to intense yellow-orange and warted. The color is generally more yellow and less orange and the profuseness of the warts is generally less than in the crookneck group. An illustration of a slightly necked, warted, but not pointed fruit, possibly an incipient straightneck form, appeared in a botanical tome published in France in 1700. The French botanist A.N. Duchesne illustrated in 1770 a mature straightneck fruit, warted and about 34 cm long, a comment on which was published later (Lamarck, 1786). A yellow, warted, humpback squash was described in Germany at about the same time. No mention of the straightneck squash appeared in any writings from North America before 1896. The cultivar names listed by Hansen and Thornber (1901), 'Long Golden Straightneck' and 'Straightneck Summer', were both considered to be synonymous with 'Giant Summer Straightneck' by Tapley et al. (1937), who stated that this cultivar was introduced by seedsmen in 1896, being a selection out of the 'Giant Crookneck' cultivar. On the other hand, Tapley et al. reported that several straightneck strains that were beginning to achieve popularity were developed in the decade before their writing. Today, the straightneck cultivars have economic importance in the northeastern United States. The straightneck is favored by some because it is easier to box and pack than the crookneck. Almost all extant

Fig. 6. Cocoselle squash. One fruit each, left to right, smooth nonstriped subgroup 'Ibis' and 'Ortolano di Faenza'; smooth striped subgroup 'Cocozelle', 'Long Cocozelle', 'Striato Pugliese', 'Cocozelle Tripolis', and 'Striato d'Italia', ribbed striped subgroup 'Romanesco', 'Fiorentino', and 'Arte'.

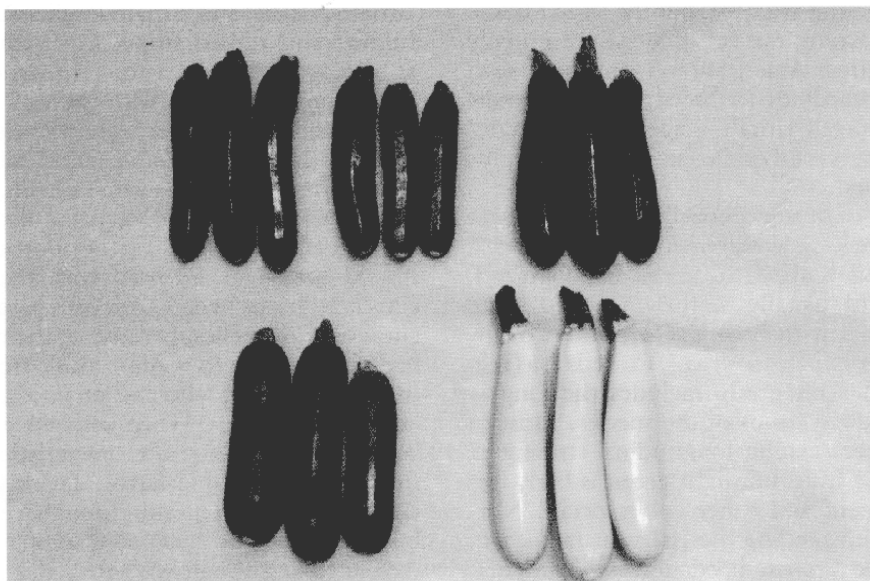
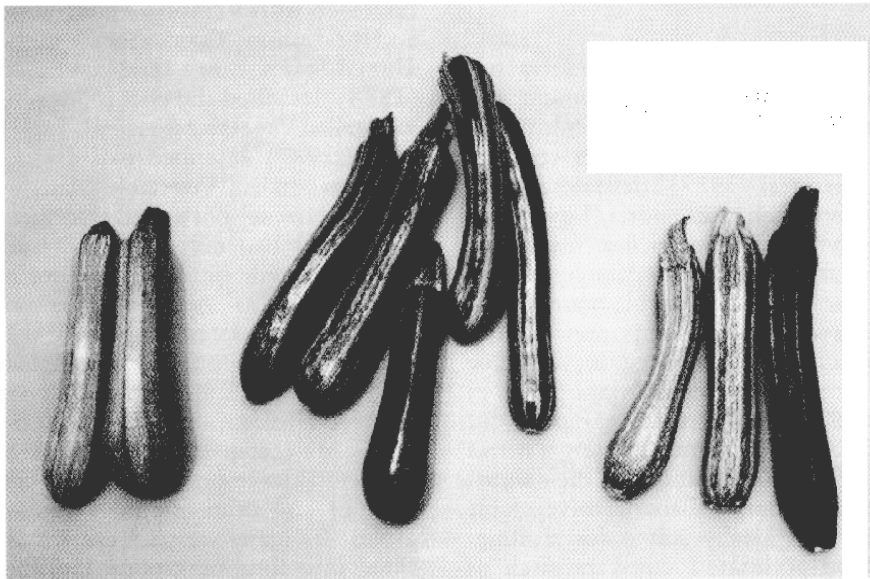


Fig. 7. Zucchini squash. Three fruit each, left to right (top row) 'Black Zucchini', 'Fordhook Zucchini', and 'Nero di Milano' and (bottom row) 'Verde Lungo di Milano' and 'Goldy'.



Fig. 8. Commercial field of zucchini squash near Bet She'an, northern Israel. Relatively small plants with short internodes and upright growth allow for easy management.

straightneck cultivars are hybrids developed by American seed companies, with 'Seneca Butterbar', 'Multipik', 'Golden Girl', and 'Seneca Prolific' being perhaps the most familiar. One open-pollinated cultivar that has persisted in commerce is 'Early Prolific Straightneck'.

In the vegetable marrow group, the fruit have a short, tapered, cylindrical shape, narrow near the peduncle, broad near the blossom end, ratio of length-to-broadest width ranging from 1.5 to 3.0 (Fig. 5). Most cultivars have light green fruit, although there are some English cultivars with dark green or striped fruit. Vegetable marrows appeared in a 1566 painting by Joachim Beuckelaer of Flanders and then in a Belgian botanical tome of 1576. Another illustration of a vegetable marrow or incipient vegetable marrow appeared in a botanical tome published in 1591. After that, there appear to be no original depictions or descriptions of this group until some drawings made in France by Duchesne around 1770, brief comments on which were published later (Lamarck, 1786), and a detailed description written in England by Sabine (1816). From then on, the vegetable marrow is mentioned continually, mostly in Europe but also in North American writings. In the *Journal of the Royal Horticultural Society* of 1913, many vegetable marrows are described, differing in plant growth habit (most being viney), plant vigor, fruit color (almost all white or cream) and overall uniformity. Thus, it ap-

pears that the vegetable marrow underwent intensive development and proliferation in number of cultivars in England during the 19th century. Tapley et al. (1937) briefly described a cultivar from Alexandria, Egypt, and from their description it seems to have had fruit of typical vegetable marrow shape. Today, vegetable marrows are of great economic importance in the Middle East. In that region, vegetable marrows are almost always prepared by slicing lengthwise, scooping out the central pulp and replacing it with a stuffing of meat and rice; their short, broad cylindrical shape makes vegetable marrows ideally suited for stuffing. Open-pollinated cultivars such as 'Beirut' and 'Sihi Lavan' ('White Bush') are still available, but the large Middle Eastern market has induced many North American and European seed companies to breed vegetable marrows. 'Clarita', 'Beida', and 'Clairette' are several of the familiar hybrid cultivars.

In the cocozelle group, the fruit are long to extremely long, cylindrical but bulbous near the blossom end, and usually slightly tapered. The length-to-broadest-width ratio approximates to greatly exceeds 3.5 (Fig. 6). This group includes the longest fruited forms of the species. Most of them exhibit longitudinal striping of the fruit, but light green is fairly frequent and other colors occur. Notwithstanding the Italian name, it was the French horticulturists who first described the cocozelle. In 1770,

Duchesne illustrated a mature cocozelle fruit, a brief comment on which was published later (Lamarck, 1786). Seringe (1847) described the cocozelle as being eaten when only 10 to 14 cm long. Naudin (1856) described four cocozelles, two striped and two light green; the existence of several distinct forms indicates that the cocozelle must have been in cultivation for a considerable length of time before his writing. Vilmorin (1883), the French seedsman, presented a fine illustration. Tamaro (1901), writing in Italy, described two striped cocozelles; the 1916 edition is furnished with Vilmorin's illustration and the caption "Cuccuzzella". In the United States, Burr (1863) and Goff (1888) described the cocozelle cultivar 'Italian Vegetable Marrow'. Tapley et al. (1937) described two distinct cultivars, 'Italian Vegetable Marrow' and 'Cocozelle' but stated that these two names had not only been used interchangeably but also that they in fact referred to an entire group of cultivars, many representatives of which were described in catalogs from Italian seed companies. This situation has not changed. Indeed, probably more diversity in vegetative and reproductive characteristics occurs in the cocozelle than in any other summer squash group. Its many varieties can be divided into four subgroups: cultivars with smooth, striped fruit such as 'Striato d'Italia' and 'Striato Pugliese', cultivars with ribbed, striped fruit such as 'Romanesco' and 'Lungo Fiorentino', cultivars with smooth, light green fruit such as 'Alberello di Sarzane' and 'Ortolano di Faenza', all from Italy, and cultivars with smooth, pale green fruit from Turkey and the former Yugoslavia. Forms of the ribbed, striped subgroup are used with the corolla still attached, 1 to 2 days past anthesis. Cocozelles, because of their high surface area to volume ratio, are used for steaming whole when young and for stir frying. When somewhat larger, some develop a characteristic rich, green-vegetable flavor. Hybrid cultivars of the various subgroups have been developed by Italian seed companies, including 'Albatros', 'Arte', 'Ibis', and 'Romano'.

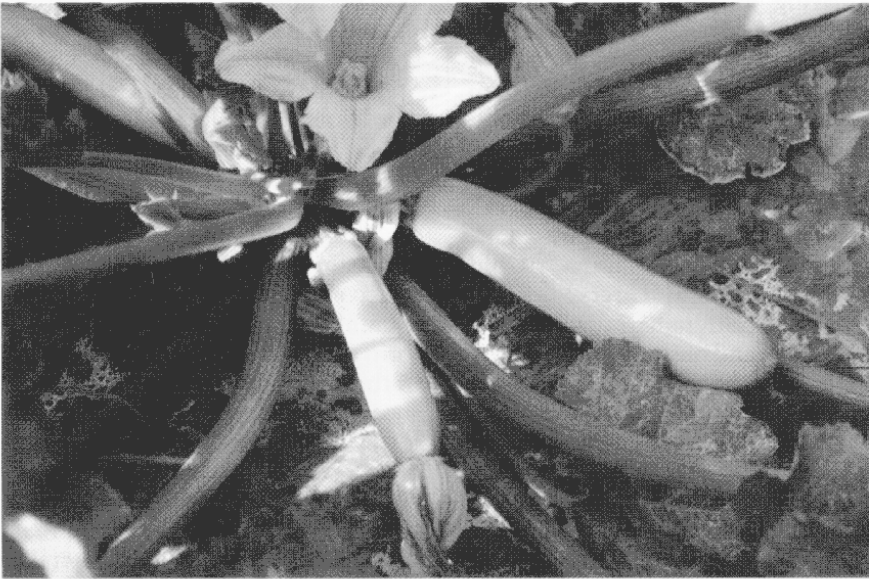


Fig. 9. Individual plant in a commercial field of 'Goldy' zucchini squash. Producing a minimum of foliage and a lot of fruit, this is an example of the modern, highly productive, true zucchini hybrids.



Fig. 10. Closed growth habit of 'Benning's Green Tint' scallop squash. In addition to the main shoot (at top center), there are several side shoots (branching to the left at center and lower center, and branching toward the right at lower center). Petioles of all but the oldest leaves are vertical.



Fig. 11. Open growth habit of 'Goldy' zucchini squash. Only a main shoot (at right, rear) occurs; all but the youngest petioles are horizontal.

In the zucchini group (syn. courgette), the fruit are long, cylindrical, with little or no taper, and a length-to-width ratio approximating or exceeding 3.5 (Fig. 7). Nearly all zucchini cultivars have medium green, dark green, or very dark green fruit, although some cultivars from the eastern Mediterranean area have pale green fruit and, more recently, cultivars have been developed that have intense yellow fruit. The history of the zucchini is considerably shorter than that of the cocozelle. The earliest description of what might have been a zucchini (but perhaps was a cocozelle) cultivar was 'Larnaca', which was described by Naudin (1856) as being uniformly cylindrical to slightly bulbous and light in color. It was not until about 1900 that a cultivar of the familiar dark green zucchini was described, this being 'Zucca Quarantine Vera Nana' (Tamaro, 1901). This form was said to have a short stem, with long, slender, cylindrical, dark green fruit, thereby closely resembling the modern zucchini. Tapley et al. (1937) described two zucchini cultivars that had been listed first by North American seed companies in 1921 and 1931; the name zucchini seemed to have been used first in California, but by 1937 it had come to represent a distinct group. Pangalo (1955) considered the zucchini to be the most modern group of summer squash because all of the zucchini cultivars had bush growth habit, a derived characteristic. Although it is the only recently evolved summer squash group, the zucchini is today the most widely grown and economically the most important group of *C. pepo*. It is grown, to a greater or lesser extent, probably in every region in which summer squash is grown, and is the predominant form in many parts of the world. Its long cylindrical shape is adapted to a wide variety of culinary uses. Some open-pollinated cultivars, such as 'Black Zucchini', 'Black Beauty', 'Fordhook Zucchini', 'Nero di Milano', and 'True French' are still in commerce, but most of the market is comprised of over 100 hybrids, resulting from breeding that has been conducted in the United States, Europe, and elsewhere over the past 40 years. Many of the so-called zucchini hybrids released in the 1950s and 1960s are actually intergroup crosses between a cocozelle or a vegetable marrow with a zucchini; these intergroup hybrids,

by having distantly related parents, exhibit tremendous hybrid vigor. However, they have a somewhat tapered, less desirable fruit shape than pure zucchini, either hybrid or open-pollinated. Among the hybrid cultivars having the classic uniformly cylindrical fruit shape are 'Aristocrat', 'Arlesa', 'Barequet', 'Blackjack', 'Dark Star', 'Diplomat', 'Dusk', 'Elira', 'Gold Rush', 'Goldy', and 'Large'.

Several cultivars having round fruit (pumpkins) and bush growth habit are grown in Italy and France for consumption of the young fruit. Among these cultivars of summer pumpkins are 'Tondo di Nizza' (syn. 'Ronde de Nice'), 'Tondo Chiaro di Toscana', and 'Tondo Scuro di Piacenza'. One ribbed cultivar of summer pumpkin, 'Gourmet Globe', was commercialized in the United States. Like the summer squash and unlike the typical Halloween pumpkins that are so well adapted to carving, these summer pumpkins are difficult to slice at maturity because they have lignified rinds. One of the reasons that the summer squash in general are so ill-adapted for use when mature is their lignified rinds. This condition is quite pronounced in the scallop, crookneck, and straightneck groups, whose relatively small fruit develop lignified rinds that are especially thick and also are warted (Schaffer, 1983).

Some of the old English marrow cultivars, such as 'Tender' and 'True', were in fact pumpkins that were used when half grown. This use of some pumpkins apparently is derived from the ancient use of the primitive landrace pumpkins in Mexico. These Mexican forms have large vines, are late to flower, and produce a relatively low proportion of female flowers, have poor productivity, and are highly susceptible to diseases. The fruit have thick, lignified rinds and are usually prominently ribbed, but vary in fruit shape, size, and color. These primitive pumpkins probably are representative, in whole or in part, of the ancestral forms of the vegetable marrows, cocozelles, and zucchini (Decker, 1985; Paris, 1989). Apparently round-fruitedness has been favored in Mexico. After the arrival of *C. pepo* in Europe, most notably in Italy, long fruit shape, bush growth, earliness, and productivity were selected; variable landraces or local cultivars occur in Italy until the present, but they differ sharply from Mexican stocks in these characteristics.

Breeding summer squash is conducted in an increasing number of countries, among them the United States, Mexico, France, Italy, Spain, The Netherlands, Israel, South Korea, and Taiwan. Besides the universal goals of crop breeding, i.e., increased productivity, earliness, and disease resistance, there are a number of important horticultural characteristics that need to be accounted for in breeding summer squash. The fruit shape needs to conform as closely as possible to the ideal of the group being bred. Chances for success increase if the fruit color conforms to the current demands of the particular target market. Size of the blossom scar should not be excessively large. At harvest, the peduncle should separate easily from the plant stem, or tend to fracture several cm away from the fruit. Among the foliar characteristics, small plants, short internodes, and bushy, upright growth are essential for easy management and harvest (Figs. 8 and 9). Foliage that is as spineless as possible is desired for less scratching of the fruit when picked. Open growth habit, a complex characteristic conferred mainly by lack of branching and horizontal petiole angle (Figs. 10 and 11), is essential for rapid harvest and less damage to the fruit when picked (Baggett, 1972). Relatively small plant size is preferred, as excessive foliage is unnecessary for good production and tends to hide the fruit. Furthermore, the economic value of the fruit is inversely related to their size, smaller fruit commanding a higher price in nearly all cases. Large plants, typical of intergroup-hybrid zucchini, tend to have excessively fast fruit growth, which results in oversizing of the fruit very quickly.

Breeding summer squash appears to be more intensive now than ever before. The 1980s witnessed the release of a number of cultivars, especially of zucchini, with exceptionally good combinations of the desired traits enumerated above. Even more recently there have been reports of success in breeding for resistance to virus diseases in zucchini and crookneck. In the future, one can expect combinations of the best horticultural traits with disease resistance. These elite combinations probably will be achieved first in zucchini, which can be expected to continue as the economically most important and horticulturally most advanced group of summer squash.

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