plastic. It is most readily propagated by softwood cuttings that root consistently in less than three weeks. The plant also may be increased at other seasons by grafting on seedling *H. syriacus* understock or by hardwood cuttings. Rooted cuttings or grafts will flower the first season, but it is not until the 2nd or 3rd year that the plant produces heavy flowering. It will grow best in a sandy loam with a pH of 5.5-7.0 but is adaptable to diverse soil types. The growth habit will be more compact and the flowering heavier in full than in partial sun. For commercial nursery production, it develops free-flowering container plants for garden center sales and is amenable to bare-root mail order merchandising.

**Outstanding characteristics and uses**

Since ‘Minerva’ produces little or no seed, the gardener no longer needs to rogue an annual harvest of weed seedlings under specimen plants. The dense branching, lustrous foliage, and continuous mass bloom are combined in a landscape plant that may be used as a specimen, clipped hedge, mass screen, or trained as a single trunk standard for use as the container specimen or the focal point of the more formal landscape. This triploid cultivar is a noteworthy shrub to brighten the summer landscapes of parks, industrial developments, roadsides, residential properties, and patio or shopping mall containers.

**Availability**

The U.S. National Arboretum releases ‘Minerva’ but does not have stock of this cultivar available for distribution. The plants increased by cooperative wholesale propagation nurseries will be the source of plants for introduction in 1986. Later, plants will be distributed to cooperating arboreta, botanic gardens, and research institutions.

**Literature Cited**


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**Fig. 1.** Dense-branched, heavy-foliaged, profuse-flowered ‘Minerva’.

**Fig. 2.** Lavender with dark red eye spot flower of ‘Minerva’.

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**‘Winterset’ Lettuce**

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Major reliance for protection of lettuce plantings from lettuce mosaic virus (LMV) in the United States is placed on a seed indexing procedure developed in California (1). The only major crisphead lettuce (*Lactuca sativa* L.) cultivar in the United States with resistance to lettuce mosaic has been ‘Vanguard 75’, released by the U.S. Dept. of Agriculture, cooperatively with the California Agricultural Experiment Station, in 1975 (3). ‘Vanguard 75’ is one of the important cultivars in the mid-February to early March harvest period in the desert districts of California and Arizona. It is also a major early cultivar in the spring season of the San Joaquin Valley. ‘Winterset’ is a new lettuce mosaic-resistant crisphead lettuce. It is suitable for the same periods and districts as ‘Vanguard 75’ and, in addition, is adapted for production in late winter in the desert.

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**Origin**

‘Winterset’ was released in early 1984. It was derived from a cross between two breeding lines, 66-93-8 and M399 (Fig. 1). Line 66-93-8 is a sister line to ‘Salinas’ and was derived from a cross between ‘Calmar’ and 8830. The latter was selected from a cross of a crisphead breeding line with a plant derived from crosses with the wild species *Lactuca virosa* L. M399 contributed the recessive allele for lettuce mosaic resistance (mono). This allele was derived from a wild Egyptian lettuce, PI 251245, and transferred to the crisphead type through a series of crosses, including two backcrosses to ‘Vanguard’. Standard pedigree selection from the cross 66-93-8 x M399 produced an F2 line, 72-735. Seeds from selected plants were massed, increased, and placed in field trials, starting in the winter of 1973-74, as breeding line no. 72-735M. Individual plant selections were made and further tested. The white seeded components of two single plant F2 selections from 72-735M: 72-735M-8 and 72-735M-9, were increased in the greenhouse, bulked, and released as ‘Winterset’.

**Description**

‘Winterset’ has medium-dark-green outer leaves, which are slightly shinier and lighter green than those of ‘Vanguard 75’. The green color extends close to the core on a partially trimmed head. The interior color is creamy. Heads are firm to hard at maturity and usu-
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Disease reactions

‘Autumn Amber’ has the genotype momo for resistance to LMV (2). It is susceptible to lettuce infectious yellows virus, but becomes slightly less yellowed than ‘Empire’ and ‘El Toro’ (J.D. McCreight, personal communication). Its reaction to tipburn has been tested in only one trial: it was less resistant than ‘Salinas’ and equivalent to ‘Vanguard 75’ and ‘Vammax’. Reactions to other lettuce diseases are not known. It is similar to ‘Van-guard’ in postharvest reactions, including moderate sensitivity to pink rib and russet spotting.

Adaptation

Based upon 33 trials in experimental and commercial plantings, ‘Winterset’ has performed best when planted from mid-October to early November in the Imperial Valley, Blythe, and Yuma districts for harvest from early February to early March. In the San Joaquin Valley, plantings in mid- and late-November for harvest in early and mid-April have been satisfactory. ‘Winterset’ is not recommended for planting at any time in the California coastal districts.

The seed stalk is usually low (4 to 5 cm), but it may elongate slightly under moderate temperature stress conditions. Under high temperature stress the plant will probably bolt.

Notable characteristics

‘Winterset’ has 3 desirable traits: 1) it is resistant to LMV, 2) it is of the popular ‘Salinas-Vanguard’ type in appearance and quality, and 3) it is more dependable in heading, and therefore more widely adapted, than ‘Vanguard’ or ‘Vanguard 75’.

Availability

‘Winterset’ has been officially released and seed should be available from most seed companies.

Literature Cited