REGISTRATION OF WASHOE ALFALFA

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‘Washoe’ alfalfa (Medicago sativa L.) was developed and tested cooperatively by the Crops and Entomology Research Divisions of the U.S. Department of Agriculture and Agricultural Experiment Stations of Arizona, California, Idaho, Nevada and Oregon. It was released by these agencies in February 1966.

Washoe was synthesized in 1961 and given the experimental designation Nevada Synthetic T. The parental clones and their immediate origin are: N383 and N388, selections from the variety Nemastan; N466, N529 and N600, F₁ selections from a cross of C89 × C900 (both C89 and C900 are parents of ‘Lahontan’); N552, an F₂ selection from a cross (Nemastan × a Nebraska selection); N694, a wilt resistant survivor from open pollination of N466: N1-113; an F₁ selection from N105 × N552. N105 is a selection from PI 141.492 whose resistance to the stem nematode is not affected by temperature.

Washoe is similar to the variety Lahontan in having high resistance to stem nematodes, both biotypes of the spotted alfalfa aphid, and bacterial wilt. The principal advantage of Washoe over Lahontan is its high resistance to pea aphids. In pea aphid tests with Lahontan and several other varieties the progeny of the 8 clones comprising the variety Washoe gave slightly larger yields than any of the 20 clones tested. Results of a test at Tucson, Arizona, comparing the spotted alfalfa aphid resistance of Washoe with Lahontan and ‘Caliverde’ indicated that 90% of the Washoe seedlings survived the test as compared to 50% for Lahontan and 0.3% for Caliverde. Washoe is susceptible to leaf and stem diseases, and for that reason is not adapted to humid climates.

Forage yield tests of Washoe have been conducted in Nevada, Arizona, Arkansas, California, Idaho, Kansas, Nebraska, North Dakota, New Mexico, Oklahoma, Oregon, Utah and Washington. Washoe yielded as well or better than Lahontan in all tests except in two tests in California. Washoe generally gave higher first cut yields than Lahontan; however, it does not recover quite as rapidly as Lahontan.

Washoe is expected to be of value in the Pacific Coast and intermountain states in areas where pea aphids, stem nematodes, or potato leafhoppers can be expected to reduce yields of other varieties. It should yield substantially more than Lahontan in areas where first cut yields of Lahontan are low, or where pea aphids can be expected to reduce yields of Lahontan.

The parental clones are maintained by Arnold-Thomas Seed Service and Pioneer Hi-Bred Corn Company and placed in commercial seed channels in 1962. Washoe was offered to growers in its area of adaptation in the spring of 1966.

REGISTRATION OF 522 ALFALFA

Lloyd E. Arnold²

The variety ‘522’ of alfalfa, Medicago sativa L., was developed by the Arnold-Thomson Seed Service and Pioneer Hi-Bred Corn Company and placed in commercial seed channels in 1962. 522 is a synthetic consisting of 20 clones selected from 5,000 individually spaced plants from ‘Vernal.’ Selection of the parental clones was based on flower color, regrowth from crown, growth habit, first cut yield, leafiness, plant color, plant vigor and seed yield. The clones included a wide range of flower color — some are lavender, variegated, purple, white and yellow. Some of the parental clones are tolerant to the spotted alfalfa aphid.

522 is a winter-hardy alfalfa with a fall growth pattern similar to that of Vernal. Growth habit is semi-erect to erect. The variety is somewhat more vigorous in midsummer than Vernal and recovers after clipping slightly more rapidly. 522 has more resistance to bacterial wilt than ‘Ranger.’ Reaction of the variety to the potato leafhopper is similar to that of Vernal. The area of adaptation of 522 appears to be similar to that of Vernal.

Forage trials of 522 in its region of adaptation have been consistently good, equal to, or better than, that of Vernal. In a 2-year trial at Johnston, Iowa, to evaluate protein content, 522 has been higher than Ranger or Vernal. The average percent protein for the 2 years for 522 was 17.45%, for Ranger 16.57% and for Vernal 16.49%.

At Five Point, California, in 1963 and 1964 indicated that 522 was satisfactory.

The parental clones are maintained by Arnold-Thomson Seed Service in California. The procedure for maintenance of seed classes is as follows: breeder seed is produced from vegetative cuttings of the 20 parent clones randomized in a crossing cage or an isolated field and mass harvested; foundation seed is the first generation grown from breeder seed produced in the northern region of adaptation; and the only authentic certified seed of this variety, according to the originators, will be that produced from breeder or foundation seed.

An application for review of 522 for certification was presented to the National Certified Alfalfa Variety Review Board at its December 1965 meeting and received favorable consideration. Certified seed of 522 was offered to growers in its area of adaptation in the spring of 1966.

REGISTRATION OF MARK II ALFALFA

R. P. Murphy and C. C. Lowe²

‘Mark II’ alfalfa, Medicago sativa L., is a vigorous, winter-hardy variety selected from ‘Narragansett.’ It was developed by the Department of Plant Breeding, New York State College of Agriculture and Cornell University Agricultural Experiment Station, Cornell University, and released in 1965. ‘Mark II’ was produced in response to a need to maintain an adequate and stable seed supply for a variety with the forage production characteristics of Narragansett. Narragansett is particularly well adapted to the soils and environments of the Northeast. Erratic and relatively low seed production by Narragansett has made it difficult to produce adequate quantities of certified seed. Mark II has shown a superiority of seed yield to Narragansett in field tests, in plant growth chamber tests with honeybees, and in hand crosses among plants in greenhouses.

One hundred clones were selected for high seed production