

# Registration of Crop Cultivars

## REGISTRATION OF DESERET ALFALFA<sup>1</sup>

(Reg. No. 78)

M. W. Pedersen and G. D. Griffin<sup>2</sup>

'DESERET' alfalfa (*Medicago sativa* L.) was developed cooperatively by the ARS, USDA, and the Utah Agricultural Experiment Station. Deseret was tested as Utah 5045, and released in April, 1975 as 'Kayseri'. The name was changed to Deseret in September, 1975 because of prior usage of Kayseri.

Deseret was developed from two cycles of phenotypic recurrent selection in the greenhouse for stem nematode [*Ditylenchus dipsaci* (Kuehn) Filip] resistance in a plant introduction from Turkey (P.I. 279 958). Approximately 150 stem nematode resistant plants were selected from a population of 2,500 plants. The resistant plants were interpollinated by leaf cutter bees in a field cage. The procedure was repeated in a second cycle of selection.

Deseret is a tall, high-yielding cultivar with dark green foliage and flowers that vary from nearly white to purple. Bacterial wilt resistance [*Corynebacterium insidiosum* (McCull.) H. L. Jens.] and cold tolerance of Deseret are about like 'Ranger', but stem nematode and downy mildew resistance (*Peronospora trifoliorum* de Bary) are considerably better than Ranger. Deseret is susceptible to both pea aphids [*Acyrtosiphon pisum* (Harris)] and spotted alfalfa aphids [*Therioaphis maculata* (Buckton)]. The saponin concentration of Deseret (per bioassay) was lower than that of Ranger. Digestibility of Deseret was intermediate between Ranger and 'Dupuits' when tested in vitro, but similar to Ranger, 'Lahontan', and DuPuits when tested with sheep. Deseret is adapted to irrigated areas in the intermountain region where conditions are similar to northern Utah.

Seed produced from the second cycle of screening will constitute breeder seed and will be maintained at Logan, Utah. Three generations of increase beyond breeder (foundation, registered, and certified) will be permitted. The production of foundation and registered seed shall be restricted to Idaho, Oregon, Washington, and the northern half of Utah and Nevada.

Deseret was favorably reviewed in 1974 by the National Certified Alfalfa Variety Review Board.

<sup>1</sup> Registered by the Crop Science Society of America. Cooperative investigation of the Utah Agric. Exp. Stn. and ARS, USDA. Journal Article No. 2010, Utah Agric. Exp. Stn. Accepted 25 Feb. 1977.

<sup>2</sup> Research agronomist and research nematologist, respectively, Crops Research Laboratory, Utah State Univ., UMC 63, Logan, UT 84322.

## REGISTRATION OF UC CARGO ALFALFA<sup>1</sup>

(Reg. No. 79)

W. F. Lehman, E. H. Stanford, D. C. Erwin, and M. W. Nielson<sup>2</sup>

'UC CARGO' alfalfa (*Medicago sativa* L.) was developed by the University of California Agricultural Experimental Station and the ARS, USDA. It was tested experimentally as UC 66 and released in December, 1976.

UC Cargo is the product of the sixth cycle of selection in a broadbased germplasm pool in which germplasm additions were made in each cycle and severe selection pressure was exerted by stand competition, soil salinity, over-irrigation, and the spotted

<sup>1</sup> Registered by the Crop Sci. Soc. Am. Accepted 25 Feb. 1977.

<sup>2</sup> Agronomist, Dep. of Agronomy and Range Science, Univ. of California, Davis, (P.O. 1004 E. Holton Rd., El Centro, 92243); professor and agronomist, Dep. of Agronomy and Range Science, Univ. of California, Davis, 95616; professor and plant pathologist, Dep. of Plant Pathology, Univ. of California, Riverside, 92502; and entomologist, ARS, USDA, and Univ. of Arizona, Tucson, Ariz.

alfalfa aphid (*Therioaphis maculata* (Buckton)). The fifth cycle of this germplasm pool was released as 'UC Salton'. Germplasm in UC Cargo traces to 83.5% from UC Salton, 7.2% from resistant selections for Phytophthora root rot (*Phytophthora megasperma* Drechs.), 5.7% from Sirsa introductions, 3.4% from UC SW44, and 0.1% from a white seeded line.

UC Cargo is an upright, purple-flowered, highly nondormant variety with winter growth similar to UC Salton. It is adapted to low desert valley areas of southern California where the summer disease complex is important and winter forage is desired. Production of UC Cargo was similar to UC Salton, and other nondormant varieties when tested under relatively normal irrigation conditions, but the productivity of UC Cargo was generally higher than all other varieties when grown under stress of over-irrigation and/or during relatively high summer temperatures. It is moderately resistant to Phytophthora root rot, and the low desert valley summer disease complex. UC Cargo is resistant to the spotted alfalfa aphid, with resistance to Biotype H being similar to 'Mesa-Sirsa', 'Lew', and UC Salton. It also has resistance to the pea aphid (*Acyrtosiphon pisum*, Harris) similar to UC Salton. It is susceptible to the blue alfalfa aphid (*A. kondoi*, Shinji), but the reaction is less susceptible than Mesa Sirsa, 'Sonora', and 'Hayden'.

Breeder seed (Syn 1) of UC Cargo is a mixture of 50% seed produced near El Centro, Calif., in 1971 and 50% in 1972. Seed classes will be breeder, foundation, and certified. Breeder seed will be maintained by the University of California, Department of Agronomy and Range Science, Davis, Calif. If the supply of breeder seed should be depleted, a lot of foundation seed shall be set aside and used to produce subsequent foundation seed.

UC Cargo was favorably reviewed by the National Certified Alfalfa Variety Review Board at its December, 1975 meeting. No application will be made for variety protection.

## REGISTRATION OF UC SALTON ALFALFA<sup>1</sup>

(Reg. No. 80)

W. F. Lehman, E. H. Stanford, and D. C. Erwin<sup>2</sup>

'UC SALTON' alfalfa (*Medicago sativa* L.) was developed by the University of California Agricultural Experiment Station. It was tested experimentally as UC 52 and released in February, 1972.

UC Salton is the product of the fifth cycle of selection in a broadbased germplasm pool in which germplasm additions were made in each cycle and severe selection pressure was exerted for the summer disease complex, Phytophthora root rot (*Phytophthora megasperma* Drechs.) and the spotted alfalfa aphid (*Therioaphis maculata*, Buckton).<sup>3</sup> Germplasm was from many sources including old adapted cultivars, unadapted cultivars, and selected lines from the University of California breeding program. Seed for each cycle was planted in broadcast stands with very high seeding rates (28 or more kg/ha) in areas 0.07 to 0.69 ha in size. Seed was produced on the surviving plants after 2 years. Essentially no insecticides were used.

UC Salton, purple-flowered, upright-growing, recovers rapidly after cutting. It is adapted to the low desert valley areas of southern California where the summer disease complex is important and winter forage is desired. It is highly nondormant,

<sup>1</sup> Registered by the Crop Science Society of America. Accepted 25 Feb. 1977.

<sup>2</sup> Agronomist, Dep. of Agronomy and Range Science, Univ. of California, Davis, (P. O. 1004 E. Holton Rd., El Centro, 92243); professor and agronomist, Dep. of Agronomy and Range Science, Univ. of California, Davis, 95616; and professor and plant pathologist, Dep. of Plant Pathology, Univ. of California, Riverside, 92502, respectively.

<sup>3</sup> Lehman, W. F., E. H. Stanford, D. C. Erwin, V. L. Marble, and W. H. Isom. 1973. UC Salton a new cultivar of alfalfa for low desert valley areas of southern California. Calif. Agric. Exp. Stn. Bull. 864.