Registration of Crop Cultivars

REGISTRATION OF FIVE ALFALFA CULTIVARS
(Reg. Nos. 71 to 75)
E. H. Beyera

A-57, 'AS-49,' 'SX-10,' and 'Caliente' alfalfa (Medicago sativa L.) were developed by the Farm Seed Research Corp.

A-57
A-57 (Reg. No. 71) is a seven-clone synthetic that was developed for the Embro Seed Co., Inc., St. Louis, Mo. Before release it was tested experimentally.

These clones, six of which were from 'Vernal' and one traced to 'Ranger,' were selected from fields in Montana, Wisconsin, and California. They were polycrossed with other clones and the progenies were evaluated in Brookings, S. Dak. for persistence, recovery after cutting, resistance to leafhopper (Empoasca fabae) yellowing, rapid spring recovery, and leafiness. Seven plants were selected as the parent clones for A-57.

A-57 will be primarily used for hay in the central corn belt region of the United States. It has an upright growth habit, with less fall dormancy than Vernal and Ranger and a level of bacterial wilt (Corynebacterium insidiosum) resistance similar to Rangef. Resistance to leafhopper yellowing is similar to Vernal.

A-57 will be produced on a three-generation basis: breeder (Syn 1), foundation (Syn 2), and certified (Syn 3). Breeder seed was produced in 1969 and 1970 from an isolated planting of vegetative cuttings of the seven parent clones. Parent clones are being maintained by the Farm Seed Res. Corp. for further production of breeder seed. Foundation seed will be produced from either foundation or breeder seed. No other class or generation of seed will be recognized as A-57. Certified seed became available in 1974.

AS-13
AS-13 (Reg. No. 72) was developed for Ferry-Morse Seed Co., Mountain View, Cali. It was tested under the experimental designation SAR-Syn (4IH + 9NH), as FSRC A-7.

AS-13 is a synthetic derived from 13 seed lines. Open-polinated seed was collected from nine 'Moapa' plants and four 'Lahontan' plants which were growing in nurseries in California and Arizona. These 13 plants were selected for their seed production, spotted alfalfa aphid (Thrips palmi) resistance, and general agronomic performance. Thirty-six seedlings were selected from each of the 13 lines for seedling vigor. These 468 seedlings were transplanted in an isolation block in 1959 for the production of breeder seed.

AS-13 is adapted throughout southwestern United States. It has good seedling vigor and fast recovery after cutting. It is intermediate between Moapa and Lahontan in fall dormancy. It has a level of bacterial wilt resistance similar to Ranger. It has low level of Phytophthora root rot (Phytophthora megasperma) resistance which is slightly better than Moapa. AS-13 has resistance to original biotypes of spotted alfalfa aphids found in California.

Seed classes for AS-13 are breeder, foundation, registered, and certified. A reserve of breeder seed, produced in 1959 and 1960 at Bakersfield, Calif., is maintained by the Farm Seed Res. Corp. for further production of breeder seed. Foundation seed will be produced only from breeder seed, one each of foundation and certified. No other class or generation of seed will be recognized as AS-13. Certified seed became available in 1974.

AS-49
AS-49 (Reg. No. 73) developed for Ferry-Morse Seed Co. It was tested experimentally as SAR-Syn (6K + 3N + 3Z).

AS-49 is a synthetic produced from 12 seed lines. Open-polinated seed was collected from 12 plants growing in source nurseries in California and Arizona. Six of the plants were traced to 'Cody,' three to 'Zia,' and three to Lahontan. The plants were selected for seed production, spotted alfalfa aphid resistance, and general agronomic performance. Thirty-six seedlings were selected for seedling vigor from each of the 12 parental seed lines. These 482 seedlings were placed in an isolation block for the production of breeder seed.

AS-49 is used for hay and green chow in northern California, New Mexico, Western Kansas, Colorado, and Texas. Its fall dormancy is similar to Lahontan. It is resistant to biotypes of the spotted alfalfa aphid present in central California. It is more resistant to bacterial wilt than Ranger, but less than Vernal. It has more Phytophthora root rot resistance than Moapa, but less than Ranger. It is similar to Vernal in fall dormancy, but is more resistant to common leafspot (Pseudopeziza medicaginis), downy mildew (Peronospora trifoliorum), and leafhopper yellowing than Vernal. AS-10 will be used for hay and pasture in areas where Ranger and Vernal are adapted.

Breeder seed (Syn 1) was produced in 1969 at San Benito, Calif., from vegetative cuttings of the 14 parental clones. Parent clones are being maintained by the Farm Seed Res. Corp. for future production of breeder seed, one each of foundation and certified. No other class or generation of seed will be recognized as AS-10. Certified seed became available in 1974.

Caliente
Caliente (Reg. No. 75) was developed for Ferry Morse Seed Co. Before release it was tested experimentally as FSRC A-63.

Caliente is a 15-clone synthetic. Ten clones were selected from an experimental line AS-10, which was developed from plant selections from the varieties 'African,' 'Indian,' and 'Iraqui.' The other five clones were selected from the variety AS13. The clones were selected after being evaluated in Bakersfield, Calif., for resistance to downy mildew and biotypes of spotted alfalfa aphids common to the southern San Joaquin Valley. High seed set and general agronomic performance were also considered.

Caliente is very nondormant in the fall and winter. It has good seedling vigor and fast recovery after cutting similar to Moapa. It is more resistant to spotted alfalfa aphid and downy mildew than Moapa.

1 Registered by the Crop Science Society of America. Received Oct 20, 1974.
2 Former research director, Farm Seed Res. Corp., now production manager, Vegetable and Flower Seed Div., Ferry-Morse Seed Co., Mt. View, CA. 94042.
3 Recognition is extended to J. Lewis Allison, now director, Irrigated Agr. Res. Ext. Cen., Washington State University, Prosser, Wash. for his contribution to the development of the variety.