and a recurrent selection population (two). Two of the parents of 520 are also parents of ‘ATRA 55.’ The clones and their open-pollination and restricted polycross progenies were evaluated over a period of years at several midwestern locations. Selection of parents was based upon persistence, resistance to bacterial wilt and other diseases, high general combining ability, adequate seed production, and good forage appearance, including dark green color.

520 has averaged more than 10% more hay per acre than Vernal or Ranger in tests conducted over a 4-year period in Iowa, Indiana, Illinois, Minnesota, Wisconsin, and Pennsylvania. It yielded second only to ATRA 55 in the first harvest year in 10-entry irrigated trials conducted in both Alberta and Saskatchewan, Canada. It is more resistant to downy mildew (Peronospora trifoliorum d By.) than either Vernal or Ranger. 520 represents a major improvement over other cultivars in resistance to the leaf spot caused by Leptosphaerulina briosiana (Poll.) Graham & Luttrell.

520 is slightly less dormant, as measured by late fall growth, than Vernal. It has flower colors ranging from deep purple through variegated to a few plants with pure yellow flowers. Seed yields of 520 have approximated those of Ranger in trials conducted in Fresno County, California.

520 was favorably reviewed by the National Certified Alfalfa Variety Review Board at its December 1968 meeting and has been accepted for certification.

Seed of 520 will be produced under the three-generation sequence — breeder, foundation and certified. Breeder seed represents the composite from the eight parental clones replicated and randomized either in a cage or an isolation. Foundation seed is the first generation grown from breeder seed under the supervision of the originator. The only authentic certified seed of 520, according to the originator, will be produced from breeder or foundation seed.

1 Registered by the Crop Science Society of America. Received August 25, 1969.
2 Director of Research, Assistant Director of Research, and Research Foreman, respectively, Arnold-Thomas Seed Service, P. O. Box 2345, Fresno, Calif. 93725.
3 Personal correspondence from Dr. D. H. Heinrichs.

REGISTRATION OF 'ATRA 55' ALFALFA1
(Reg. No. 45)
Jonas W. Miller, Howard L. Carnahan, and Michael H. Yamada

'ATRA 55' alfalfa (Medicago sativa L.) is an 8-clone wilt resistant, winter-hardy synthetic cultivar adapted to the Northern and Central areas where 'Vernal' and 'Ranger' are grown. It was developed cooperatively by the Arnold-Thomas Seed Service and Pioneer Hi-Bred Corn Co., and was marketed in the spring of 1969. The parent clones were selected from Vernal (two), 'Narragansett' (one), 'Arnim' (one), 'Culver' (two), and a recurrent selection population (two). Two of the parents of ATRA 55 are also parents of 520. The clones and their open-pollination and restricted polycross progenies were evaluated over a period of years at several midwestern locations. Selection of parents was based upon persistence, resistance to bacterial wilt and other diseases, high general combining ability, moderate resistance to bacterial wilt and other diseases, high general combining ability, and white or pale yellow flowers. Seed yields of ATRA 55 have averaged about 10% more hay per acre than Vernal or Ranger.

1 Registered by the Crop Science Society of America. Received August 25, 1969.
2 Personal correspondence from Dr. D. H. Heinrichs.
3 Personal correspondence from Dr. D. H. Heinrichs.

REGISTRATION OF MONTezuma
(Reg. No. 226)
C. A. Suneson

The oat cultivar 'MONTEZUMA', CI 8419, classified as a semiwinter to spring-type red oat similar to 'California Red' and 'Monterey,' was released by the University of California Agricultural Experiment Station and the California C.C. II oat germplasm) in 1969. It has been evaluated.

Montezuma has the highest test weight and is recommended for direct combine harvesting in California. A seed size separation, based on seed produced at three diverse locations, showed 84% of Montezuma's seed sieveable through a 0.198 x 1.905-cm (5/64 x 3/4-in) screen, compared to 'Curt,' 62%, and 'Sierra,' 78%. Other features include moderately resistant to the leaf disease caused by Leptosphaerulina briosiana (Reg. No. 226) and high general combining ability.

Montezuma is a semiwinter to spring-type red oat similar to 'California Red' and 'Monterey,' with medium to stiff, leaf blades are midwidth and plant height is intermediate. Panicle type is medium sized and midplump, with matured lemmas being midlong to long, and predominantly red. Spikelet separation is by semi-abscission and floret separation primarily through heterotypic union of initially ovotrichous sessile florets. Awns are common to numerous taxa.

In California, oats are best adapted to the coast districts but also are grown in the Joaquin Valleys. Montezuma matures 8 days earlier than Sierra and is rated slightly earlier than Curt. Montezuma may be useful in the drier, hotter climates where it will be less desirable than later-maturing cultivars.