Both lines were developed by the Texas Agricultural Experiment Station at Lubbock for adaptation to short season, narrow-row production systems. The plants of both lines are short stunted and have short fruiting branches and stormproof bolls.

Stability of fruiting and fiber development over a range of temperatures would improve production efficiency and fiber quality in areas such as the Texas High Plains where climatic conditions are quite variable with suboptimal temperatures often occurring during both early and late season.

Small seed lots of approximately 20 g may be obtained from the Foundation Seed Service, Texas Agricultural Experiment Station, College Station, TX 77843.

REFERENCES


REGISTRATION OF USDA 21055 HOP
GERMPLASM1
(Reg. No. GP 5)

Alfred Haunold, S. T. Likens, G. B. Nickerson,
C. E. Horner, and C. E. Zimmermann2

A female hop genotype, USDA 21055, with unusually high alpha acid content and very high resin gland (lupulin) content was developed. The line consistently had a higher alpha acid content than the highest alpha acid lines in the USDA world collection of hops.

The genotype resulted from a 1968 cross between the female cultivar Comet3, and a male seedling (selection 6616-35M). The male originated from a cross between the female cultivar 'Brewer Gold' and a male seedling from the female cultivar 'Fuggle' (Accession No. 19209) crossed to a wild American male collected in Colorado (Accession No. 60026M). The male parent of Comet is an indigenous North American male hop from Utah (Accession No. 58006M). Therefore, USDA 21055 contains at least 50% North American germplasm from its male ancestors 60026M, 58006M and the 'Wild Manitoba' female parent of Brewer's Gold3. Indigenous North American germplasm in the 'Brewer Gold' germplasm pool of the Foundation Seed Service, Texas Agricultural Experiment Stn. (TA 13774) from the Texas Agric. Exp. Stn., Texas A&M Univ. Released 1 May 1978.

Yields of USDA 21055 in replicated test plots have averaged comparable or slightly better than those of Fuggle with 68 to 80% of the alpha acid potential. Cone set is sparse with poor clustering, frequently terminate in a single large cone with few originating between bracts. Average cone weight of USDA 21055 is about 200 mg.

The new high-alpha genotype was first tested as selection 6060-80 as a single nursery plant from 1969-71 near Corvallis, Oregon. USDA 21055 matures medium late (early September) and has deep lobed leaves like its wild American ancestry, with numbers of leaf glands early in the spring, particularly on young leaves. The stem is coarse and covered with rows of hooked hairs which also abound on the leaf petiole. The cultivar produces a large number of shoots in early spring. Shoots grow easily and grow to the top of the trellis (5.5 m) at a rate that can be expected to reach the top wire and does not form a head of foliage. Laterals are primary and do not systemically infected. The genotype appears to be resistant to Downy mildew, Pseudoperonospora cubensis (Miy. et Tak.) G. W. Wils., both in the greenhouse and in the field. Occasionally a young shoot in the crown stage shows signs of primary infection but the crown generally remains healthy.

The genotype appears to be resistant to Verticillium wilts (Verticillium albo-atrum) incidences involving USDA 21055 and selected male genotypes confirmed that the cultivar transmits its desirable quality traits to its progeny with moderately high frequency.

The original breeder stock of USDA 21055 maintained by the Oregon Agric. Exp. Stn., Corvallis, OR 97331, is on file with the Foundation Seed Service, Texas Agricultural Experiment Stn., Lubbock, TX 79401. The work was supported in part by the USDA with funds made available through Cotton Incorporated. Accepted 1 Apr. 1978.

REGISTRATION OF GERMLASMS

1 Registered by the Crop Sci. Soc. of Am. Contribution (TA 13774) from the Texas Agric. Exp. Stn., Texas A&M Univ. Research and Extension Ctr., Lubbock, TX 79401. The work was supported in part by the USDA with funds made available through Cotton Incorporated. Accepted 1 Apr. 1978.
2Associate professor, Texas Tech Univ. (joint with Texas Agric. Exp. Stn.) and professor, Texas Agric. Exp. Stn., respectively, Lubbock, TX 79401.
4Research geneticist and chemist, respectively, USDA; chemist, Dep. of Agricultural Chemistry, Univ.; research plant pathologist, FR-SEA-USDA; and research plant physiologist, FR-SEA-USDA.