

## A NEW CROP VARIETY FOR RELEASE IN MISSISSIPPI

Trifolium vesiculosum  
Meechee Arrowleaf clover

I. History and Background

- A. Seed of this accession were secured from the University of Pisa, Italy, by Drs. H. S. Gentry and H. A. Schoth, Plant Explorers for the U. S. Department of Agriculture, Bureau of Plant Industry. The Soil Conservation Service secured the seed of this accession and two others from the Southern Plant Introduction Station at Experiment, Ga., in the fall of 1956. The plant has subsequently been tested at the Service's Plant Materials Centers at Arcadia, Fla., Americus, Ga., and Coffeeville, Miss. It has been widely tested in field plantings on Soil Conservation District Cooperators' farms in the South. Reports have been published on the species from Pisa, Italy (Favilli); from the Auburn University; and from the University of Georgia (Hoveland, Beatty). A variety has been released as Yucchi clover from Alabama, and Amclo from Georgia.
- B. This variety has carried accession numbers which include: FAO 2999, PI 233782, MS 329, and F 892.
- C. The parental stock has been increased under conditions to maintain its purity and identify without re-selection, or changing in genotype from that which was received.

II. Description of Variety

## A. (Botanical Description.

From the Caucaue area of the Middle East, a plant 20 to 75 cm in natural state, taller in cultivation. Flowers in dense heads

globular to elongated large up to one inch across and as much as 2½ inches long; petals white and rose to rose-purple, turning brown at maturity. Pods are borne in an inflated "vesicle" formed by the calyx. Trifoliate leaves are large, varying from lanceolate to ovate to rhomboid. They are marked with a characteristic whitish or lighter green "v" across the blade. Stems are solid and characteristically reddish to purplish, green in full sun in peak growth. The stipules are membranaceous, enlarged at the base and long-pointed at the summit. In open stands, many branches develop, terminated by a flowerhead. In dense stands, fewer terminals per plant develop.

- B. Widely spaced mature plants of Meechee Arrowleaf clover consists of an upright stem, 18 to 36 inches tall, with longer spreading branches that curve outward and upward near the end. In a dense stand, the side branches are suppressed and the central stem grows taller. Meechee Arrowleaf clover is a very late maturing plant. Seeds commonly mature in late July in the vicinity of Coffeeville, Miss.; later still if water has been plentiful in the late spring. There are no special identifying characteristics other than the late maturity to mark this crop and distinguish it from similar varieties of the same species.

### III. Yield

- A. The yield of Meechee Arrowleaf clover has been as great as four times that of such crops as crimson clover. It often produces less in the early fall growing season but surpasses the production of crimson in the spring. Thereafter it continues to grow and yield well for as much as two months longer than crimson clover. Seed production is good and has exceeded four hundred pounds of clean seed per acre from direct combining. Air dry weights for the period April 16-May 7, 1965, at

Coffeeville, Miss., are shown in the table below.

Air Dry Weights (1965)

Date	Meechee Arrowleaf Clover: (pounds per acre)	Crimson Clover (pounds per acre)
April 16	4,167	5,111
April 23	8,495	4,530
April 30	5,662	4,010
May 7	5,728	3,024
Total	24,052	16,675

The crimson clover made no more growth after May 7, but the Arrowleaf clover continued to produce into July.

B. Tolerance to Production Hazards

Diseases and insects have not been important in the evaluation of this variety. It is subject to drought conditions in the eastern part of the South where severe May droughts commonly occur. This, in effect, reduces the production potential and seed yield. This drought damage has not been noted in the area from northwest Alabama to the Louisiana-Texas-Arkansas-Oklahoma line in six years of field evaluations.

C. Quality Factors

The variety is very palatable to cattle, is easy to harvest, and cures as hay, and has a high protein content. It is somewhat stemmy and for this reason, apparently, does not have the bloat hazard of some other similar leguminous crops. Volunteer stands are common throughout the area of its adaptation. Seed are being harvested from areas that reseeded. Meechee Arrowleaf clover is the most cold-resistant of the three varieties known.

D. Expected Area of Adaptation

Its area of adaptation is the area from about the middle of Alabama westward through the entire states of Mississippi, Louisiana, and

Arkansas except for higher elevations in the Ozarks. It is particularly well adapted on the Mississippi-Alabama blacklands and on the Mississippi silty upland soils. It appears that it will have good adaptation on the blacklands of Texas and into southeastern Oklahoma.

#### E. Limitations or Disadvantages

Experience indicates that inoculation will be difficult to secure the first time the crop is planted on a given piece of land. Successive crops, either planted or volunteer, have not exhibited this difficulty. Special inoculation is available.

#### IV. Source, Amount, and Management of Breeder's and Foundation seed

The Soil Conservation Service, Plant Materials Center, in Coffeeville, Miss., has four acres in production of foundation quality seed. The Service proposes to maintain a sufficient acreage of foundation quality materials as long as needed.

#### V. Proposed Place and Time of Public Release

Release should be made so that plantings can be made by cooperating growers in the Fall of 1966 for certified seed production.

#### VI. Literature Citation

Beatty, E. R., John D. Powell, and R. A. McCreery, 1963. A New High Yielding Winter Clover. Ga. Agr. Exp. Sta., Univ. Ga., College of Agr. cooperating with the Soil Conservation Service, Circular NS-35.

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Favilli, R. 1952. Alcune ricerche ed osservazioni sopra il trifoglio "Ruffo di Calabria" (*Trifolium vesiculosum* Savi) - Istituto di Agronomia Generale e Coltivazioni Erbacee, Della Università di Pisa: In the Annali della Facoltà di Agraria, Nuova Serie, Vol. XVIII (La Dalla Fondazione).

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Langford, W. R. and Gordon B. Killinger. 1961. New Plants for the South. Southern Cooperative Series Bull. 79, pp 45-46.

Young, W. C. Minutes of Meeting of the Technical Committee, Southern Cooperative Project S-9, New Plants, La. State Univ., pp 59-61. Dec. 1 & 2, 1960.