

MISSISSIPPI STATE UNIVERSITY  
 AGRICULTURAL EXPERIMENT STATION

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MISSISSIPPI

**MEECHEE—A NEW VARIETY OF ARROWLEAF CLOVER**

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Meechee, a new variety of arrowleaf clover, has been evaluated by the Soil Conservation Service in cooperation with the Mississippi Agricultural Experiment Station, and moderate amounts of foundation seed will be available this fall from the Mississippi Foundation Seed Stocks organization.

Meechee has the following characteristics:

(1) Late maturing, providing later grazing than any other reseeding annual clover adapted to the South.

(2) Cold hardy, the most resistant to cold injury of the three varieties of arrowleaf clover.

(3) Adapted to a wide variety of soils.

(4) Makes good seed yields that are easy to combine.

(5) Highly productive. The main productive period occurs after April.

(6) Can be used for hay or grazing.

Arrowleaf clover (*Trifolium vesiculosum*, Savi.) is a relatively new crop in the United States. The first plants known to have been grown in this country were several accessions introduced from Italy by the New Crops Branch, ARS, and grown at Experiment, Georgia by the Southern Plant Introduction Station in 1956. Since that time, two varieties have been released, Amclo and Yuchi; the first in Georgia and the second in Alabama. Meechee is the third.

In maturity, Amclo is earliest, Yuchi midseason and Meechee latest. The maturity differences in the three varieties are needed in order to have properly adapted varieties in the several states. Early maturing Amclo is the only variety that can consistently set seed crops in central and southern Georgia. Meechee in a different rainfall pattern sets good seed crops throughout Mississippi, Louisiana, and Arkansas and has the added advan-



A field of Meechee arrowleaf clover.

tage of being more productive and cold hardy. Yuchi, the intermediate variety, fits the intermediate position in Alabama and the shifting rainfall pattern.

Meechee arrowleaf clover is a hard seeded winter hardy, annual legume which produces most of its forage after April 1. It can be grown alone or in combination with grasses for both hay or grazing. Experience has shown that it will volunteer dependably when seed are allowed to mature. Plants stand upright — are stemmy with large leaves that are characteristically marked with a "V" in lighter green on each leaf. However, arrowleaf clover is self-sterile and wide variation exists in leaf marking and other plant characteristics.

Origin and Development

Seed of the Meechee arrowleaf clover bearing the number P.I. 233782 were obtained by the Soil Conservation Service in 1957 and planted that fall at the American Plant Materials Center, Americus,

Georgia. It was subsequently tested by the Soil Conservation Service at the Plant Materials Center at Arcadia, Florida and at Coffeeville, Mississippi. It was widely tested in subsequent years in field plantings on Soil Conservation District Co-operators' farms in the South.

The seed received produced stands with relatively uniform height, flower color and maturity. These stands differed from others of the same species primarily in season of maturity and height at maturity. Since then, this strain has been maintained under conditions to insure its purity. No selection or change in the original lot has been made.

In open stands, Meechee produces many branches with each terminated by a flower head. A single plant under these conditions consists of an upright stem, 18-36 inches tall, with longer spreading stemy branches that curve outward and upward near the end. In dense stands, the branches are suppressed and the central stem grows taller. Flowers are borne in dense heads globular or elongated and are from

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one inch to 2½ inches long. Petals are white and rose to rose-purple, turning brown at maturity. Pods are borne in an inflated "vesicle" formed by the calyx.

The variety is not readily distinguished from other varieties except as to maturity time. Hence, it will be necessary for seed to be produced under certification in order to assure varietal purity.

#### Performance, Establishment and Management

Meechee has exceptional yield potential. The use of Meechee arrowleaf clover with summer grasses will extend the grazing season of the legume into July compared to May 1 for other annual clovers. Seed production is good and has exceeded 400 pounds of clean seed per acre by direct combining.

Uniform stands of arrowleaf clover are difficult to obtain. Lack of uniform germination is attributed to the hard seed content of this specie and to the characteristic of high temperature dormancy also found in this specie.

Best results are obtained by planting on prepared seedbeds in the fall at the accustomed season for seeding winter legumes. Eight to ten pounds of seed per acre are needed. Inoculation is critical with arrowleaf clover and unusual care should be observed in inoculating the seed. Cultures are available from the major companies. Fertilizer should be applied at the rate of 40-60 pounds of  $P_2O_5$  and 30-60 pounds of  $K_2O$  per acre or according to the recommendation of a soil test.

Seed can be sown with success on pasture sods without preparation.

Grazing can be done as soon as adequate growth accumulates and should be regulated to provide about 4-6 inches of stubble. For reseeding, livestock should be removed by the middle of June or early July depending upon the season and condition of the crop. For hay, it should be cut at about the early bloom stage.

Arrowleaf clovers are equally susceptible to crown rot (*Schlerotinia trifolium* Eriks.) as other legume species. Damage

to stands from alfalfa weevils and aphids have also been observed at State College.

Meechee arrowleaf clover can fit well into many grazing management systems. The main productive period of growth for Meechee arrowleaf clover begins as other annual clovers reach maturity. The use of Meechee arrowleaf clover can effectively extend the grazing season for grass-legume combinations.

Foundation seed, available from the Experiment Station Foundation Seed Stock, Box 5267, State College, Miss., may be used to produce certified seed in 1967.

For those who wish to try the crop or who want it just for hay or grazing in 1966, moderate quantities of non-certified seed are locally available on the commercial market from the Soil Conservation District Cooperators who have included: W. F. Barber, Coffeeville; Don-helped in testing the crop. Some of these are: Bryant, Laurel; E. L. Burnes, Forest; O. W. Ball, Houston; T. P. Miller, Drew; Brooks Martin, Corinth; H. H. Leard, Purvis.