New Varieties for the Northern Winter Oat Regions

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For the past 25 years few, if any, fall-sown oats have rivaled the variety Lee (14) in production and popularity throughout the region where it is best adapted. This region includes the Piedmont valleys and adjacent uplands of Maryland, Virginia, North Carolina, South Carolina, and Georgia. Many selections from Lee and Lee crosses have been made but none has yet proved sufficiently popular to supplant Lee. Except for Red Rustproof (14,3) oats in the South, in no other section of the United States has a single oat variety been grown so predominantly for so long a period. As a consequence, the appearance at this time of oats which threaten Lee’s position is of interest. New varieties—Arlington, Atlantic, and Coy (C. I. 4657, 4599, and 4600, respectively)—have been produced, and several states are increasing the seed for possible distribution. These strains were selected from crosses made in 1937 between a Lee × Victoria strain and Fulwin.

Older Lee Derivatives

The history and main characters of the Lee oat are well known and need not be mentioned here (1,14,15). Also much has been published on the Victoria and Fulwin varieties which served as parents of the crosses from which the varieties mentioned were derived (2,3,4,10,12). Among numerous crosses made with Lee during the past 25 years, that between Lee and Victoria has been the most important. From it resulted such well known varieties as Letoria, Lelina, DeSoto, Lega, and the Stanton strains (11, 13, 16). In these valuable varieties the most desirable characters of the two parents were combined to a considerable extent. All of them have much in common and all have been tested widely where Lee is best adapted, but none has fully replaced Lee, especially in Maryland and Virginia. There are several reasons for this. All of the Lee-Victoria derivatives are shorter-strawed and less vigorous than Lee, especially in the fall. Most of them are less winterhardy than Lee, and often they do not equal Lee in production of winter pasturage, a most important consideration for an oat in the area.

History of New Derivatives of Lee

In 1937 the senior writer made a series of crosses at the Aberdeen Branch Experiment Station, Idaho, between derivatives of the Lee-Victoria cross and the Fulghum (winter type) strain Tenn. Husky, called Fulwin. At that time Fulwin was the most winterhardy oat available for fall planting. These crosses were made primarily to increase winterhardiness of Lee-Victoria derivatives. The crosses between Lee-Victoria, Sel. Pl-1-22, and Fulwin were reselected at the Plant Industry Station, Beltsville, Md., indicated C. I. 4316 was heterozygous for crown rust resistance, as it had previously been shown to be so for certain plant characters. C. I. 4316 was reselected at the Plant Industry Station, Beltsville, Md. Among the reselections are the strains now designated as C. I. Nos. 4550, 4551, 4553, 4658, 4670, and others. Of these, C. I. Nos. 4550 and 4657, named Atlantic, Coy, and Arlington and at Tucson, Ariz.

Among these F4 generation rows was number 3788, which later was given the C. I. Nos. 4316. Tests conducted in cooperation with H. B. Humphrey in 1939, 1940, and 1941 at Arlington, Md., indicated C. I. 4316 was resistant to crown rust and smut. Later tests made by the writers in the greenhouse at Beltsville, Md., indicated C. I. 4316 was heterozygous for certain plant characters. C. I. 4316 was reselected at the Plant Industry Station, Beltsville, Md. Among the reselections are the strains now designated as C. I. Nos. 4550, 4551, 4553, 4658, 4670, and others. Of these, C. I. Nos. 4550, 4553, 4658, and 4670, named Atlantic, Coy, and Arlington, respectively, have given the most promise.

Description of New Oats

The reselections from C. I. 4316, Arlington, and Coy, are similar in plant and kernel characters. They are light green in the seedling stage, tiller vigorously, and are early-maturing, tall-growing, and stiff-strawed, productive oats. All have large, spreading panicles similar to Lee and are large, plump, yellow, awnless kernels of good test weight. The Atlantic and Coy are usually equal to Lee in winterhardiness, whereas Arlington is superior to the others. Arlington is somewhat more winterhardy than Lee and Victorian derivatives, which are less winterhardy than Lee, and often they do not equal Lee in production of winter pasturage, a most important consideration for an oat in the area.

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