A HIRSUTE ECOTYPE ISOLATED FROM COMMON DALLISGRASS (Paspalum dilatatum POIR) 

C. R. Owen

DALLISGRASS has been widely spread over much of the Southeastern states for more than 60 years and in Louisiana and adjoining states for over 100 years (5). Its origin is thought to be Uruguay and adjoining areas of Brazil and Argentina. It has been an important pasture grass in Australia since before 1900 (5). In spite of the wide dissemination of this species only three distinguishable types have been reported (3). One is erect with yellow anthers; a second type is semi-prostrate with purple anthers; and the third is common dallisgrass which is semi-erect with purple anthers. Common has enjoyed the widest distribution since it has been planted in pastures for more than fifty years (5). From studies of more than 100 dallisgrass ecotypes during the past 25 years, Burton (3) reported that most of them resembled common dallisgrass very closely and he was unable to distinguish morphological differences between any except the erect, yellow-anthered and prostrate types, both of which came from Uruguay.

A limited germ plasm survey was made of common dallisgrass using sources of seed from natural stands in Louisiana and adjoining states (4). From this work two strains, B230 and 430 were isolated. These strains were significantly more fertile than common dallisgrass, but the increases were apparently not sufficient to make the new strains acceptable as substantial improvements in seed production of this grass in the southern region. No seed of these are being produced commercially at the present time. Morphologically, the plants of these strains were not different from that of the parent.

A plausible explanation for the lack of response of common dallisgrass to the effects of change was offered by Bashaw and Forbes (1) and Bashaw and Holt (2). From the report with microsporogenesis in dallisgrass it was stated that “common and semi-prostrate types maintain a constant chromosome number in the presence of extreme meiotic irregularity and the relative uniformity of progeny appearance suggest some form of reproduction.” From this work, the chromosome number was reported as 50 with 20 bivalents and 10 univalents. Investigations of microsporogenesis, embryo sac development, and embryo substantiated the earlier work with microsporogenesis and led to the postulation of reproduction by apomixis, apospory followed by pseudogamy.

An exceptional plant of common dallisgrass found among a collection of clones in Louisiana is shown in Figure 1. Its distinguishing characteristic is the presence of the hirsute covering over the surface of the plant. This plant was found in a collection of 50 clones made in early spring before winter dormancy was broken. It was collected from 15 other locations in Louisiana, south Arkansas, and east Mississippi. Clones of this plant were transplanted at Baton Rouge in rows spaced 42 inches apart. This particular plant, as it developed in the nursery. It was the only specimen reported from common dallisgrass that showed a distinct gross morphological difference from normal plants. Aside from the covering of hairs over the glumes, it was not different from the other plants. Progeny of this plant grown in spaced rows was uniform for the hirsuteness as well as for other morphological characters. Fertility, as indicated by the occurrence of volunteers in the nursery and on the headland also appeared to be normal.

Published July, 1966

1 Contribution from the Department of Agronomy, Louisiana Agricultural Experiment Station, Baton Rouge, Louisiana. Received Feb. 7, 1966.
2 Associate Professor, Department of Agronomy.