Testing For Combining Ability in Bromegrass

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Since 1945 extensive use has been made of open-pollination progenies in the evaluation of selections of various perennial grasses at the Forage Crops Laboratory, Saskatoon, Saskatchewan. Open-pollination progenies have been used in preference to polycross progenies, as seed for testing could be obtained directly from the breeding nurseries or from replicated clonal nurseries. As isolation was disregarded and replication of clones limited, some doubt arises as to whether open-pollination progenies uniformly reflect the breeding value of selections. This paper reviews investigations in bromegrass bearing on the use of open-pollination progenies as a technique for the appraisal of plants entering the breeding program.

LITERATURE

Several studies with bromegrass have shown the relationships of open-pollination progenies to other types of progeny and parent clones. Knowles (5) found non-significant correlation coefficients of +0.44 and +0.68 between forage yields of open-pollination progenies and controlled crosses. The regression of open-pollination progenies on parental clones for forage yield was 0.17. McDonald et al. (7) reported a highly significant correlation of +0.54 between parent and open-pollination progenies.