MORPHOLOGICAL VARIATION IN POA PRATENSIS L. 
AS RELATED TO SUBSEQUENT BREEDING BEHAVIOR

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EXTENSIVE investigations in recent years have established the importance of apomictic seed formation in several Poa species. Progeny studies of Poa pratensis L. plants derived from individual panicles have shown varying degrees of uniformity to exist in morphological characters. Generally, the predominating type has been assumed to be associated with apomictic seed formation while variant plants have been thought to arise as a result of sexual reproduction. It has also been thought that variant or aberrant plants within a progeny would be more likely to produce progenies with higher percentages of aberrants than would the predominating or normal-type plants of the same progenies. The reliability of morphological classification in predicting subsequent breeding behavior is of interest in improvement investigations with Kentucky bluegrass since strains capable of maintaining a practical degree of uniformity might be desired.

Few studies have been reported of progeny breeding behavior beyond the first generation following plant selection. Tinney and Aamodt (4) suggested that the progeny test might well be used as a criterion of the method of reproduction. Myers (2) reviewed the general problem and pertinent literature and presented results of second generation progeny tests to check previous classification. He concluded that such tests were desirable to determine the adequacy of parental classification into aberrant or normal type, though, in general, second generation results served to verify first generation tests. It was also observed that variant-type plants tended to produce higher proportions of sexual plants than sister-parental or normal types.

METHODS AND MATERIALS

The results of the present studies are based upon observation of 45 strains having the following origins:

- 9 lots from O. A. C. No. 1, Guelph, Canada
- 6 lots from O. A. C. No. 2, Guelph, Canada
- 15 lots from W. H. Wright, Ottawa, Canada
- 15 lots from local collections in Wisconsin

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2 Professor of Agronomy, Wisconsin Agricultural Experiment Station, and Associate Agronomist, Division of Forage Crops and Diseases, Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. Dept. of Agriculture, respectively. First generation progenies were observed by Dr. O. S. Aamodt, formerly Professor of Agronomy at the University of Wisconsin, and the late Dr. F. W. Tinney, Assistant Agronomist, Bureau of Plant Industry, U. S. Dept. of Agriculture. The writers are indebted to the Statistical Laboratory of the Wisconsin Experiment Station for aid in the statistical calculations.
3 Figures in parenthesis refer to “Literature Cited”, p. 1040.