NUMBERING AND NOTE-TAKING SYSTEMS FOR USE IN THE IMPROVEMENT OF FORAGE CROPS

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The widespread development in the breeding of cross-pollinated perennial forage crops has resulted in considerable attention being placed upon breeding methods. Associated problems are those of applying a satisfactory numbering system in the improvement of such plant materials and of evaluating the resulting selections, strains, and varieties. Where an investigator is carrying on improvement with one or more kinds of plants, it is desirable that a single logical system of numbering be used. Such a system may facilitate the selection and use of suitable breeding procedures. A basic plan for numbering selections of plant and seed material which also includes recognition of breeding methods in their identification has been applied to the breeding of grasses and legumes at the Nebraska Agricultural Experiment Station. A numerical system of taking notes has also been adopted.

The numbering and note-taking systems which were developed over a period of years have been successfully used by the authors and in part by workers at other stations. Because of the broad application of these plans and their proved usefulness, it has been thought desirable to present them in their entirety. Although something of the philosophies of crop improvement in general are herewith implied in the numbering system, it is not intended that these be the purpose of this paper. The presentation of the plan is given rather as an example of how such a numbering system might be used in plant improvement. The plan is considered flexible enough to be adapted to the breeding of any crop.

THE NUMBERING SYSTEM

The work of keeping track of the changing genetic composition of plant material with the employment of different breeding procedures is difficult. The problems of breeding normally cross-pollinated plants are more complex than those for plants which are normally self-pollinated. With cross-pollination only the maternal side of the inheritance can be followed unless controls of pollination are established. These controls can be diverse and unless some system is used for their easy recognition in the records of the plant breeder, he is soon lost in a maze of notes concerning his selections.