

SESSILE INFLORESCENCE - A PUTATIVE NEW MUTANT IN BIRDSFOOT TREFOIL

W. F. Grant, R. B. McDougall¹ and B. Coulman

Department of Plant Science, P.O. Box 4000, Macdonald Campus of McGill University, Ste. Anne de Bellevue, Quebec H9X 3V9, Canada and ¹5928 99th Street, Edmonton, Alberta T6E 3N9, Canada



A birdsfoot trefoil plant with only a single inflorescence per individual branch, and in which the inflorescence was sessile, has been found in a single-spaced field planting of birdsfoot trefoil. Crosses are planned to obtain inheritance data.

Background of the source of the putative mutant

During the fall of 1990 and the spring of 1991 crosses were made between four cultivars of birdsfoot trefoil, namely, Cree, Leo, Upstart, and Viking, with the goal of eventually obtaining a cultivar with high quality herbage. Seed was germinated in the Spring of 1991 and the resulting seedlings were planted in individual small pots. Approximately 150 seedlings were obtained and these were planted in the field during the summer of 1991. In September, 65 of the best plants (growth habit - diameter, height, seed yield) were selected from the field and potted in the greenhouse. In January, 1992, the plants were brought into flower through the use of mercury lights which provided a daylength of approximately 17 hours. From February to April, 1992, leaf cutter bees were hatched and a few were placed in with the flowering plants approximately every week. Seed was collected from the plants and germinated. In May-June, 1992, approximately 640 individual seedlings were space planted in the field. In September, 1992, seed was harvested individually from each plant and during the collecting period, the sessile inflorescent plant was observed.

Character of the putative mutant

It is a relatively large plant with stem lengths up to 70 centimeters. The stems arise from a very stout crown and are semi-erect.

The plant possesses only a single inflorescence on each individual branch (Fig. 1). In typical birdsfoot trefoil plants, more than one inflorescence per branch is characteristic. In the putative mutant plant, the inflorescence is close to sessile and unlike typical trefoil plants the inflorescence arises only from the first node. The umbels are 2- to 7-flowered which is characteristic of normal birdsfoot trefoil plants. The plant possesses axillary peduncles which are 1.0 to 2.0 mm in length in contrast to typical birdsfoot trefoil plants in which the axillary peduncles are from 3 to 10 cm long. Bracts are present subtending the flower as on typical plants. As the sessile inflorescent plant was not observed until the plant had completed flowering, the flower color is not know. It might be assumed to be yellow as the plant did not appear to be different from other birdsfoot trefoil plants while in the flowering stage.

Sessile Inflorescence Mutations

No mutant plant possessing a sessile inflorescence is believed to have been found previously, and such a mutant does not appear in the list of Lotus mutants given in Beuselinck and Mosjidis (1991).

Crosses are planned to obtain inheritance data.

Acknowledgment

Financial support from the Natural Sciences and Engineering Research Council of Canada for a Cooperative Research and Development Grant to W. F. Grant for studies in Birdsfoot Trefoil is gratefully acknowledged.

Reference

Beuselinck, P. R. and J. A. Mosjidis. 1991. Genetic nomenclature in clovers and special-purpose legumes: III. *Lotus*, *Lespedeza*, *Kummerowia*, and *Vicia* spp. *Crop Sci.* 31: 871-874.