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**BIRDSFOOT** trefoil has become an important forage crop in the United States during the past 20 years. Varieties differ greatly in winter hardiness, growth habit, yield, and maturity. Since seeds of these varieties cannot be distinguished by visual inspection, a need exists for methods of testing them for varietal purity. Field tests require several months to complete and the seed is usually planted by the farmer before seed stocks can be evaluated. For this reason, experiments were conducted in growth chambers to devise rapid and accurate methods of conducting varietal purity tests. This paper deals with the effect of environment on plant type or growth habit. Results of research concerning the reproductive stage of birdsfoot trefoil and other species have been reported (8). A later paper will deal with the effect of environmental conditions on foliage characteristics and on length, color, number and diameter of stems.

**REVIEW OF LITERATURE**

Birdsfoot trefoil was reported by Joffe (3) to be a long day plant with a critical photoperiod between 14 and 15 hours. McKee (7) grew seedlings of 'Empire', 'Viking', and of 5 European seed stocks under photoperiods of 9, 11, 13, 15, and 24 hours in the greenhouse during summer and fall. The photoperiods were obtained by using 9 hours of natural day light and then extending it with 5 to 10 f.-c. of light from incandescent bulbs. When the plants were approximately 3 months old a significant difference existed among varieties in dry weight of tops. Varieties did not differ in dry weight of roots. The variety x photoperiod interaction was not significant either for dry weight of tops or roots. Plants grown with 9-hour photoperiods tended to be decumbent and progressively more nearly upright with increased daylength. Nittler and Kenny (8) found that Viking produced in a growth chamber could be distinguished from a blend of 5 European seed stocks by percentage of plants.