The Effect of Burning and Various Fertilizer Treatments on Seed Production of Red Fescue, *Festuca rubra L.*

H. B. Musser

The red fescue species is widely adapted for general turf use throughout the entire northeastern and North central sections of the United States. It is used alone or as an ingredient in good commercial seed mixtures for lawn purposes, particularly on shaded areas. Because of the tough character of the turf and its resistance to wear, it is particularly well adapted to sports use and as air field cover. Seed supplies have usually been limited and prices uniformly higher than those of Kentucky bluegrass.

Experimental trials at the Pennsylvania Experiment Station with individual selections of the grass and commercial plantings of 25 to 100 acres in widely separated sections of the state have demonstrated the possibilities for profitable seed production in Pennsylvania. Among the more important factors affecting seed yields are proper fertilization and control of insect and disease injury.

Observations on seed production in both experimental and commercial plantings have indicated that insect and disease injury may be responsible for serious reductions in seed yield. In preliminary studies initiated by Dr. C. C. Wernham, Department of Botany, School of Agriculture, The Pennsylvania State College, in 1941, burning of the dry vegetation in early spring gave some measure of disease control. Results, while too limited to justify conclusions, warranted further investigation of the method. This work was continued by Keil (7) who studied incidence and control methods for the "white head" disease, *Fusarium poae*, on plantings of red fescue at the Pennsylvania Experiment Station. He concluded that the fungus is the causal agent, and that one of the grass mites, *Pediculopsis graminum*, is closely associated with the spread of the disease. He reports highly significant reductions in number of diseased heads by spring burning. The burning treatment did not show a significant increase in seed yields under the conditions of his experiments.

Several workers have studied the effects of fertilizer treatments upon seed yields of grasses. North and Odland (8) and DeFrance and Odland (3) have reported on the influence of fertilizer mixtures on seed yields of species of bent grasses. Evans (5) and Evans and Calder (6) have studied the effects of fertilizing grasses for seed production at the Welch Plant Breeding Station. Burton (2) has reported on fertilizer trials with 10 southern grasses. These workers are in

---

1 Contribution from the Pennsylvania Agricultural Experiment Station, State College, Pa. Authorized on December 9, 1947, as paper No. 1352 in the Journal series of the Pennsylvania Agricultural Experiment Station. Also presented at the annual meeting of the Society held in Omaha, Neb., November, 1946. Received for publication December 30, 1946.

2 Professor of Agronomy.

3 Figures in parenthesis refer to "Literature Cited", p. 340.