SOAKING BUFFALO GRASS (*BUCHLOE DACTYLOIDES*) SEED
TO IMPROVE ITS GERMINATION

LEON E. WENGER

RESULTS of recent investigations at the Fort Hays Branch of the Kansas Agricultural Experiment Station have indicated that if buffalo grass seed is soaked in tap water for 2 to 4 days, followed by immediate and thorough drying previous to seeding, delayed germination and prolonged dormancy in this species will be largely overcome.

Poor emergence and "near failure" stands commonly resulted from early attempts at seeding, leading to the general belief, as expressed by Savage (2), that buffalo grass cannot be re-established with consistent success by artificial seedings. From field plantings of untreated seed at Hays, it has been consistently observed that emergence is slow and generally unsatisfactory. Frequently, more plants will emerge during the second year than during the first year, indicating that going through a winter season aids the germination of this seed. On several occasions, buffalo grass plants were observed to volunteer as long as 3 years after seeding, despite intervening cultivation and cropping treatments. This latter observation is substantiated by Savage and Runyon (3) in their study of the natural revegetation of abandoned farm land, where they state that seeds of buffalo grass and other hard-seeded species appeared to be capable of remaining in cultivated soils and emerging after several years of cultivation. Similar experiences have been reported by farmers in instances where buffalo grass pastures, plowed and cultivated for as long as 5 years, reverted quite rapidly to buffalo grass upon abandonment.

Additional observations have shown conclusively that the percentage germination of buffalo grass seed increases with age up to 3 or 4 years. Pladeck (1) found that weathered seed germinated better than unweathered seed and concluded that harvesting burs after a period of natural weathering is to be recommended. Greenhouse studies at Hays have shown that clean or hulled caryopses often germinate as high as 70% and 80%, indicating that the scarifying action resulting from the hulling operation is beneficial to immediate germination. The use of 75% sulfuric acid for 105 minutes as a digesting agent was found to be effective in materially increasing the immediate germination of buffalo grass seed in laboratory tests.

The following deductions might be made in evaluating these observations and findings with the possibility of practical farm applica-

---

1 Contribution of the Division of Forage Crops and Diseases, Bureau of Plant Industry, U. S. Dept. of Agriculture, in cooperation with the Department of Agronomy, Kansas Agricultural Experiment Station, Hays, Kan. Contribution No. 30, Fort Hays Branch Station. Received for publication November 9, 1940.

2 Agent, U. S. Dept. of Agriculture, and Forage Crops Specialist, Fort Hays Branch Agricultural Experiment Station. The writer is particularly indebted to Miss Albina F. Musil, Assistant Botanist, Division of Forage Crops and Diseases, Bureau of Plant Industry, U. S. Dept. of Agriculture, for making all laboratory tests and reporting her observations and findings.

3 Figures in parenthesis refer to "Literature Cited", p. 141.