EFFECT OF CULM AGE ON THE GERMINATION OF NAPIERGRASS (*Pennisetum purpureum* Schum.) SEED

* Varieties of *Pennisetum purpureum* Schum. employed as forage grasses usually are propagated by culm cuttings. This method of increase has been necessary because of the low viability of the seed. A very early report from Florida, however, states that Napiergrass seed 2 months of age gave a germination percentage of 68. A study from Argentina reports that Napiergrass seed never exceeds 50% germination in that country. Unfortunately, meaningful comparisons of the data reported herein with the observations reported from Florida and Argentina cannot be made because the testing procedures and the bases for the counts in the earlier reports were not recorded. Although critical data have not been published from studies in Puerto Rico, observations generally have indicated that germination percentages obtained on this island are considerably lower than those reported from Florida and Argentina. For this reason, Napiergrass has been propagated by means of culm cuttings since its introduction to this island.

For the purpose of establishing germination data, and to determine the effects of culm age and seed storage, a series of tests was undertaken at the Federal Experiment Station, Mayaguez, Puerto Rico, by means of seed, if feasible, would greatly reduce planting, storage, and transportation costs now charged to the bulky culms of this important tropical grass.

For these studies, mature heads of Napiergrass were collected from culms 8, 11, 14, 20, and 25 weeks of age. The original plants were cut back to 3 inches above the soil line and the new growth produced mature flowering shoots of the ages indicated above. The age of the culm was the time that elapsed between cutting and the maturation of an inflorescence on the new shoot. All plants originated from the same clone, and they were grown in the same field under similar conditions. All of the caryopses, whether filled or empty, from 10 inflorescences in each age group were combined. Triplicate lots of rough seeds with glumes and appendages from each group were planted in seed pans containing sterilized soil, and similar numbers were placed in moist blotters for germination. The remainder of the seed was stored under laboratory conditions (25±3° C.). Sixty days after harvest, similar triplicate samples of each lot were germinated as before. All germination percentages were computed 7 days after sowing on basis of total caryopses.

The results of these tests, summarized in table 1, indicate that optimum viability occurs with fresh seed, harvested.