A NUMBER of Bahia grass types have been described by Burton (2), of which the common and Pensacola types have much promise as pasture grasses for South Georgia and Florida. Perhaps the greatest limiting factor in the use of these grasses is the poor germination experienced from planting untreated seed.

In tests conducted in 1937 Burton (1) found that treating the seed with crude sulfuric acid for 45 to 60 minutes significantly increased germination and recommended that common Bahia grass seed be scarified in such a manner. At the same time it was found that heating the seed to 70°C for 4 hours did not significantly increase the germination of common Bahia. Although effective, acid scarification is not an easy or convenient treatment to make and few farmers are willing to bother with it. Further, most of the Bahia grass that is seeded is not scarified and the result is thin weedy stands which require several years to make a good sod. The need for an inexpensive and convenient method of treating Bahia grass seed is evident.

**Materials and Methods**

In the summer of 1947 studies were undertaken to determine the effects of age of seed, rates of acid scarification, and heat treatments on the germination of common and Pensacola Bahia grass seed. Small lots of the 1946 and 1947 seed crop of each variety were divided into four samples. Sample 1 received no acid-scarification and was further divided into eight subsamples, four of which were treated for 2 days at 27°C, 47°C, 57°C, and 67°C respectively. The other four subsamples were treated for 4 days at the same temperatures. Samples 2 and 3 received 40 and 60 minutes respectively of scarification with crude sulfuric acid (specific gravity 1.69) and were then subdivided and treated with heat the same as sample 1. Sample 4 was subdivided and treated with heat as were the other samples and was then treated with sulfuric acid for 40 minutes. The 128 possible treatment combinations from two varieties, two ages of seed, four rates of acid-scarification, four heat intensities, and two heat durations were randomized in a factorial design. One hundred seeds from each treatment combination were planted per row in sand in each of two replications. Plantings were made in the greenhouse on August 18, 1947. Facilities were not available for temperature control and greenhouse temperatures during the daytime were often in excess of 95°F (35°C) with much cooler temperatures prevailing during the night hours. Seedling counts were made 1, 2, 3, and 4 weeks after planting.

**Experimental Results**

The analysis of variance of the data shows highly significant differences existed between ages of seed, intensities of heat, and rates of acid scarification and that most combinations of the above variables contained highly significant interactions. Differences between 2- and 4-day treatments were not significant and values for rate of heat are averaged in the following tables. Year-old seed showed a marked decrease in germination from heat treatment, while freshly harvested seed, in general, showed a slight but not significant increase in germination. A heat intensity of 67°C caused slight reductions in germination of year-old and freshly harvested Pensacola Bahia grass seed, but acid-scarified seed. This is probably the maximum temperature that should be used in treating seed.

In Table 2 are found data illustrating the interactions between varieties, intensities of heat, rates of acid-scarification, and age of seed. It is apparent that Pensacola Bahia grass seed germinated much more readily than common Bahia grass seed. In the case of Pensacola grass seed, however, this was true only during the first 2 weeks after planting. By the end of the third week germination of heat treated seed equaled acid-scarified seed. Even at the end of the second treatment produced germinations much higher than untreated seed.

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