sprouting and establishment may be due to: (a) planting dead material such as hay left on the surface and harvested with the stolons and sprigs, (b) drying out of sprigs before or after planting, (c) allowing sprigs to heat before planting, and (d) low sprouting potential.

No published information is available on the sprouting of Coastal bermudagrass sprigs and only limited data are available on field plantings (2). This investigation was intended to establish the sprouting potential of Coastal bermudagrass when: (a) harvested at five dates, (b) stored for four periods of time, (c) stored at two temperatures, and (d) treated and not treated with a root growth stimulating hormone.

METHODS AND MATERIALS

From an area of established Coastal bermudagrass that received no fertilizer in 1953, rhizomes and stolons were harvested on October 1, November 1, and December 1, 1953, and January 2 and February 1, 1954. At each date, planting material was harvested from four or more areas within the 0.1 acre field and composited. After mixing, rhizomes and stolons were randomly selected and separated into live sprigs each consisting of three nodes, two complete internodes, and parts of the two terminal internodes. Living sprigs were mixed and subsamples of 10 sprigs each were randomly collected and tied in a bundle. Bundles were randomly assigned to further groupings.

Bundles were stored for 0, 5, 10, and 20 days in a greenhouse with a minimum temperature of 70°F. During greenhouse storage, sprig bundles were covered with 5 to 8 inches of sawdust and watered weekly. Free drainage of water was provided. Sprigs in cold storage were placed in 1-gallon closed cans. At the October harvest, the sawdust used was saturated with water and allowed to drain for 5 minutes. Starting in November, moist but well-drained sawdust was used. No drainage in cold storage was provided and rewetting was unnecessary.

After storage, sprig bundles to be treated with a commercial preparation of 3-indole acetic acid were placed in a paper bag containing a powdered preparation of the chemical. The bag was then inverted 6 to 10 times.

The sprigs were sprouted in glazed clay pots filled with potting soil. One bundle of 10 sprigs was planted per pot. Two nodes of each sprig were covered with soil. The third node was left uncovered. The soil was firmed and water was applied. Treatments were replicated four times.

The sprigs were incubated in a greenhouse at a minimum temperature of 70°F for 30 days. Pots were then emptied and the sprigs examined. Firmly attached roots and shoot growth of at least 0.5 inch were considered satisfactory sprouting.

RESULTS AND DISCUSSION

During the course of the investigation, 94.5% of all sprigs sprouted. This attests to the regenerative ability of Coastal bermudagrass over a wide range of management conditions. Sprouting at the October harvest averaged 88.5% and 94.75%, 98.0%, 97.5% and 93.5% for the next four harvests (Table 1).

Sprigs with 0 days storage sprouted an average of 96.0% and those stored for 5 days averaged 97.0% (Table 1). After 10 days storage, sprouting dropped to 94.75% and after 20 days storage, to 93.0%. These data show that Coastal bermudagrass sprigs harvested between October and February can be stored for at least 20 days with no serious reduction in sprouting.

Sprigs stored in the greenhouse developed shoots up to 7 inches in length and frequently shoots were well developed also. These shoots had been easily damaged by mechanical planters.

From a practical consideration, it would appear that the storage temperature was not critical. Temperatures high enough to prevent the development of sprouts in both sprigs and sprig bundles to be treated with a commercial preparation of 3-indole acetic acid were placed in a paper bag containing a powdered preparation of the chemical. If provided and rewetting was unnecessary.

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Use of 3-indole acetic acid had little influence on root development or sprig sprouting (Table 1). Treated and non-treated sprigs averaged 94.5% sprout sprouting and sprig elongation. Interaction between chemical treatment and type of storage was not significant. In this experiment, sprouts were treated with a root hormone that was not stimulant to develop a strong root system.

After 30 days' incubation, shoots were 4 to 7 inches high and roots were 12 to 14 inches long. Sprouts were high and roots were 12 to 14 inches long. Sprouts in temperatures above 70°F, 15 to 25 days were required before runners are actively growing. 40 to 55 days between planting Coastal bermudagrass and its active growth, weeds, if not controlled, are likely to produce a dense growth that will either kill or retard establishment. Since coastal bermudagrass is planted in the spring before the average temperature reaches 70°F, sprouting and growth are slowed and weed control over a longer period is desirable.


EFFECT OF STUBBLE REMOVAL ON SEED PRODUCTION OF BROMEGRASS

Bromus inermis Leyss.

R. P. Knowles

Brome grass seed fields are often directly combined and the remaining growth harvested at the normal time of interest to determine the effects of this stubble removal on subsequent seed crops. Information on brome grass as it affects seed yields would help in the settlement of claims from accidental fires.

Several mowing and burning treatments were applied to northern brome grass during the period 1962 to 1965. An isolated increase plot was established in 1961 with cuttings from accidental fires.