

INFLUENCE OF TEMPERATURE ON GERMINATION OF HULLED AND UNHULLED BERMUDAGRASS SEED

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Background. Some producers prefer to plant a seeded bermudagrass instead of a hybrid bermudagrass that needs to be established vegetatively (sprigs). Planting a seeded bermudagrass is less expensive and it can be planted on small areas that are not economical to sprig, or where a good seedbed is not possible such as cut over timberland. The germination of any seed is influenced by temperature. Therefore planting date is important to have good seed germination to obtain good stands. Bermudagrass seed can be purchased as hulled (outer bracts removed) or unhulled (outer bracts intact). There is no information available on the effect of temperature on germination of hulled or unhulled bermudagrass seed to determine the optimum planting date for seeded bermudagrass.

Germination of hulled and unhulled common bermudagrass seed was determined in an incubator at night/day temperatures of 41/59, 50/68, 59/77, 68/86, 77/95, and 86/104⁰F with 12 hour days. Four replications of 100 seed were treated with a fungicide and placed onto moistened blotter pads in glass Petri dishes. The dishes were covered with lids, enclosed in plastic food storage bags to retain moisture, and placed in the incubator set to one of the six temperature treatments. Seeds were kept moist with distilled water. Seeds were checked daily for 28 days to record germination. A seed was counted as having germinated when both a green leaf and the root were visible to the naked eye.

Research Findings. For the hulled seed, germination was most rapid at the three warmest temperatures (Fig. 1). However maximum germination was only 48% at 86/104⁰, 72% at 77/95⁰, but 93% at 68/86⁰F. The rate of germination was slower at 59/77⁰F but maximum germination was 82%. Germination was slower and only reached 28% at the cool temperature of 50/68⁰F. Hulled bermudagrass seed failed to germinate at the lower temperature. The rate of germination was slower with unhulled seed than hulled seed (Fig. 2). The germination of unhulled seed was the most rapid and reached the highest level at 77/95⁰F. Maximum germination of unhulled seed at the two middle temperatures was about 20 percentage points lower than the hulled seed.

Application. Hulled bermudagrass seed should not be planted until late April when daily low temperatures are in the 60's. Unhulled seed should be planted at warmer temperatures in May and June. Soil moisture conditions are usually best in April and May.

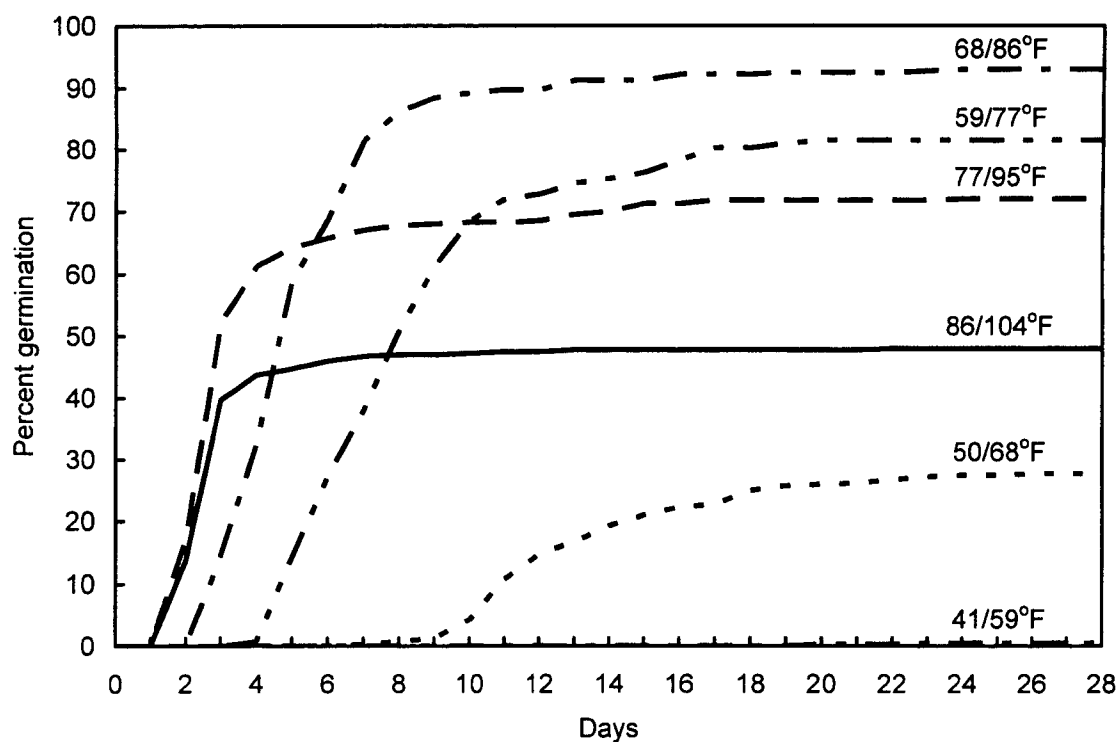


Fig. 1. Germination of hulled bermudagrass seed over 4 weeks at six night/day temperatures.

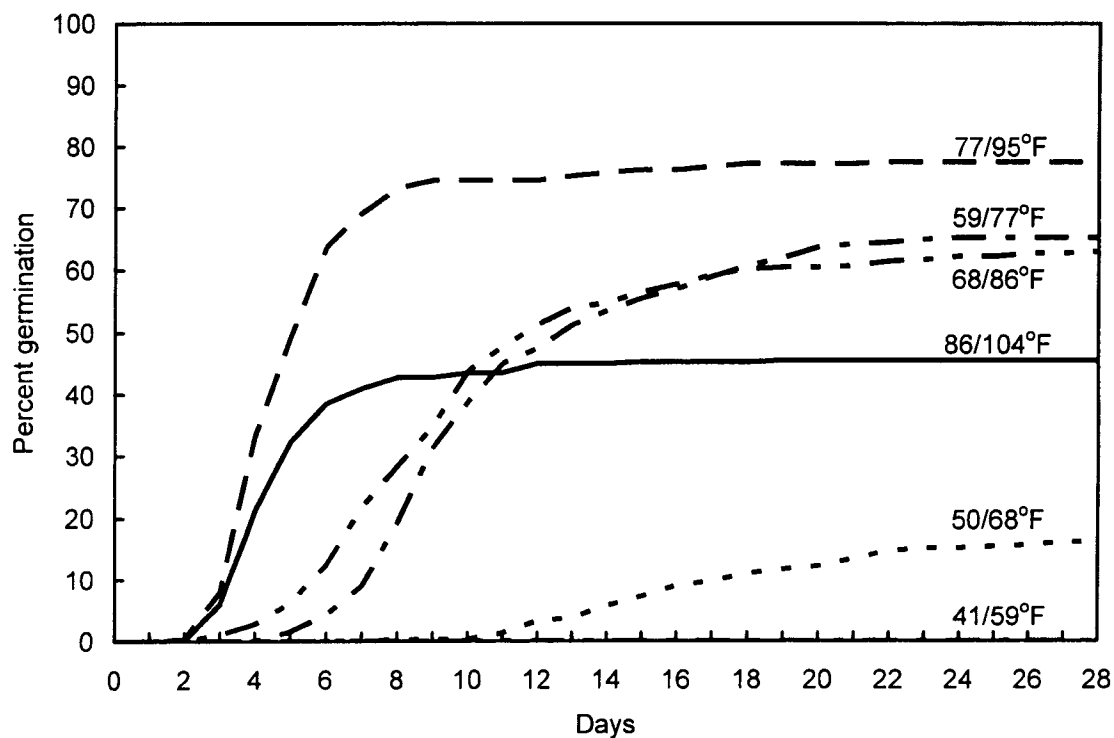


Fig. 2. Germination of unhulled bermudagrass seed over 4 weeks at six night/day temperatures.