

Improving Germination of Piligrass (*Heteropogon contortus*) Seeds Using Liquid Smoke Flavoring

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Piligrass is a drought and fire adapted, native perennial bunchgrass that is increasingly being utilized for restoration and re-vegetation in Hawaii. In recent years, there has been growing interest in utilizing piligrass in a number of applications including landscaping, stream bank stabilization, roadside re-vegetation, buffer strip plantings, forage and biofuels. While efforts are currently underway to expand its uses in Hawaii, piligrass seed production technologies remain largely undeveloped. Seed dormancy is one particular aspect that needs to be studied since piligrass seeds require at least 6 months of dry after-ripening in order to obtain germination. To improve germination and immediate use of piligrass seeds, it is necessary to develop treatments to break seed dormancy. The use of smoke and aqueous smoke extracts has been shown to stimulate seed germination in a number of species. In this study, the effectivity of liquid smoke flavoring on improving seed germination of 1 month old piligrass seeds was evaluated. Piligrass seeds were soaked for 15 minutes in distilled water, liquid smoke flavoring (1% v/v) and gibberellic acid (10,000 ppm). After soaking, the seeds were sown in petri dishes lined with moistened filter paper and incubated at ambient conditions (22 °C). Percent germination after one month indicated that liquid smoke flavoring was the most effective soaking treatment for improving seed germination. Seeds soaked in 1% v/v liquid smoke flavoring exhibited 40.8% germination in contrast to 20.0% germination in 10,000 ppm gibberellic acid and 0.5% germination in distilled water.

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