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Producing Bahiagrass Seed in Florida

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Bahiagrass seed production in Florida is undertaken by beef cattle producers to generate secondary income. Harvesting, processing and marketing of seed are carried out by seed companies. Typical management for seed production includes fertilization in February-March followed by grazing until June. Cattle are withdrawn when the first seed heads become visible to allow for seed production and harvest. Our six years data at Ona indicate that the usual timing for pasture N fertilization and cattle withdrawal are not the best for good bahiagrass seed yield.

Timing of Cattle Withdrawal From Pasture: There is a difference between Pensacola and Argentine bahiagrasses regarding the best time to remove cattle from a pasture for seed production. Pensacola begins flowering earlier in the spring than Argentine and cattle must be withdrawn earlier. Average seed yield when cattle were withdrawn from Pensacola pasture in mid-April was 600 lb/A compared with 150 lb/A of seed when cattle withdrawal was delayed to early-June. In addition to seed yield suppression, Pensacola seed development was inhibited by the wet soil conditions that occur in summer. This resulted in premature seed ripening and seed of poor quality. The 1000-seed weight declined from 1.25 g to 0.82 g, seed germination declined from 56% to 17%, and pure live seed (germination + dormancy) declined from 87% to 40% between the mid-April and early-June cattle withdrawal dates, respectively. In a separate study, Argentine seed yield when cattle were withdrawn in March or April was 50 lb/ A. Argentine seed yield increased to 200 lb/A when cattle were withdrawn in late-May. Besides being late flowering, Argentine bahiagrass seed development was less sensitive to wet summer soil conditions since seed quality was not affected by cattle withdrawal dates.

Timing and Amount of N Fertilization: Pasture fertilization in February-March is a good practice for obtaining forage for spring grazing. However, if seed production is an objective, a second application of N should be made immediately after cattle withdrawal. This N will synchronize seed head production and development at a most suitable time

resulting in increased seed yields. For Pensacola, the application of 50 lb N/A immediately after cattle withdrawal in mid-April gave 700 lb of seed/A. Comparatively, 100 lb N/A in early-June gave 220 lb of seed/A. However, for Argentine, the application of 100 lb N/A in late-March gave only 50 lb of seed/A but the same application in late-May gave 200 lb of seed/A. Argentine seed germination was reduced by heavy N application. It declined from 73% with 100 lb N/A to 58% with 200 lb N/A. Argentine seed yield also increased by 30 lb/A with 50 lb phosphate/A. When the pasture stand was 7 years old and sod-bound, the effect of N application was enhanced by burning prior to fertilization for both varieties in some years.

Summary: For best yield and quality of Pensacola bahiagrass seed, producers should withdraw cattle from pasture no later than the end of April and fertilize immediately with 50 lb N/A. Seed should be harvested in mid-July. Best management practices for high yield and quality of Argentine bahiagrass seed include late-May cattle withdrawal, 100 lb N/A and 50 lb phosphate/A immediately after cattle removal, and an early- to mid-August harvest date. Prior arrangement with commercial seed producers for a timely seed harvest will help minimize shattering losses.