Title: Agronomic Performance of Mung Bean in West Tennessee

Mung bean (*Vigna radiata*) is a good-yielding legume species possibly suited to agricultural crop rotations of interest to Tennessee farmers. This Asian grain legume boasts high nutritional value and drought tolerance. The climatic characteristics of its region of origin closely parallels those of West Tennessee's growing environment, making it a candidate for agricultural experimentation in our state. To that end, a multi-year study was conducted in typical delta soils of a research center in Shelby County in Memphis, Tennessee with the objective of testing the overall performance of two mung bean varieties, Berken and OK2000; along with their adaptability to the environmental and climate conditions there. Various planting densities and summer months were used in the seeding of the two varieties. The experiments consisted in randomized complete block designs with each plot being 6 ft. wide by 30-ft long and consisting of 9 rows spaced at 7.5 inches between rows for each plot. The total number of 36 plots were divided evenly between varieties. Planting was automated with a drill planter and involved three different seed densities: 150,000, 200,000, and 250,000 seeds per acre, all at 1 inch planting depth. Conventional tillage and herbicide treatments (Select and Reflex) were used for land preparation and weed control. Trait measurements included plot weight, seed moisture content, and total yield in lbs/acre. Results varied between the years: where yield was higher in 2023 than in 2022 although seed moisture content exhibited no significant variation in either year. Varieties demonstrated noteworthy distinctions with statistical significance (p values<0.0065 in 2022 and <0.001 in 2023) for both plot weight and overall yield but not seed moisture levels. These findings provide a scientific foundation for understanding the performance of mung bean varieties in the specific environmental conditions of Memphis, Tennessee.