

EFFECT OF TILLAGE AND HERBICIDE INPUT ON BENGHAL DAYFLOWER (*COMMELINA BENGHALENSIS*) IN COTTON**B. J. Brecke****D. Partridge-Telenko****University of Florida****Jay, FL****D. O. Stephenson****LSU AgCenter****Alexandria, LA****Abstract**

Benghal dayflower (*Commelina benghalensis* L.) is an exotic invasive weed that poses a threat to many crops in the southeastern U.S. including cotton. Benghal dayflower is listed as a federal noxious weed and was identified among the world's worst weeds, negatively affecting 25 crops in 29 countries. Studies were conducted at the University of Florida in areas naturally infested with benghal dayflower to determine the effect of tillage on management of this weed. Results indicated that conventional tillage significantly reduced the level of benghal dayflower infestation. Three levels of tillage (conventional moldboard plow, strip-tillage and para-tillage) were utilized in combination with six levels of herbicide input. Benghal dayflower density increased as level of tillage decreased (conventional tillage = 2 plant/m², para-tillage = 4 plant/m², strip-tillage = 8 plants/m²). The results indicated that benghal dayflower infestation was reduced with increasing level of tillage and that fewer herbicide inputs were required with a higher level of tillage input. Other studies indicated that benghal dayflower seedlings emerge from near the soil surface with minimal emergence from deeper than 7 cm. Additionally, benghal dayflower seed are relatively short-lived in the soil with 70% loss of seed viability within one year of seed burial. The emergence from only shallow depths and the rapid loss of seed viability may explain the impact deep tillage has on benghal dayflower infestation level. Benghal dayflower is also susceptible to shading. Benghal dayflower foliar biomass was reduced by 30% under 30% shading, 60% under 60% shading and 100% under 95% shading. Crops with a denser, deeper canopy reduce benghal dayflower growth more than less dense, shallow canopy crops.