

DEADZONE: A NEW TOOL FOR RESISTANCE MANAGEMENT IN COTTON**Andrew Pedersen****Ally Lauria****Randy Dodds****Brandt Consolidated****Fresno, CA****David Stewart****Imerys****Roswell, GA****Abstract**

The expansion of insecticide resistance in economically damaging insect pests is a serious concern in cotton production. The development of a mechanical insecticide with lower potential for resistance management, would be beneficial for cotton producers. Deadzone (Celite 610), a diatomaceous earth-based insecticide, was evaluated for management of several cotton pests in 2018 and 2019. In 2018, Deadzone was evaluated for management of bollworm, *Helicoverpa armigera* (Hubner), Lygus bug, *Lygus* spp., cotton aphid, *Aphis gossypii* (Glover), and thrips. For each pest evaluated, applications of Deadzone made at economic threshold resulted in lower pest numbers, reduced damage, and increased yield. In 2019, Deadzone was evaluated for Lygus bug management in North Carolina in two separate field trials. In a large plot study, two early applications of Deadzone increased lint yield but not with statistical significance. In a small plot study, a single application of Deadzone showed a statistically significant increase in yield and reduced adult numbers in the first evaluation after treatment. The positive results seen on insect control and yield improvement with applications of Deadzone, suggest it should be evaluated further for inclusion in cotton insect management programs, particularly where development of resistance is a concern.