

PERFORMANCE OF TANK MIX PARTNERS WITH ISOXAFLUTOLE ACROSS THE COTTON BELT**Delaney C. Foster****Texas Tech University****Lubbock, TX****Peter A. Dotray****Texas Tech University, Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service****Lubbock, TX****Todd A. Baughman****Oklahoma State University****Ardmore, OK****Seth A. Byrd****Oklahoma State University****Stillwater, OK****Stanley Culpepper****University of Georgia****Tifton, GA****Darrin M. Dodds****Steven D. Hall****Jacob McNeal****Bradley Norris****Mississippi State University****Mississippi State, MS****Reagan L. Noland****Texas A&M AgriLife Extension Service****San Angelo, TX****Scott Nolte****Mason House****Texas A&M University****College Station, TX****Jason K. Norsworthy****Roger B. Farr****University of Arkansas****Fayetteville, AR****Larry Steckel****University of Tennessee****Jackson, TN****Corey N. Thompson****BASF****Lubbock, TX****Abstract**

The increase in number of herbicide resistant weeds threatens cotton production and profitability and forcing producers to use multiple herbicide modes of action to effectively manage weeds. *P*-hydroxyphenylpyruvate dioxygenase (HPPD) inhibitors are a relatively new class of herbicide chemistry first available for use in the 1980's. While current varieties do not tolerate HPPD inhibitors, BASF Corporation has developed HPPD-tolerant cotton that will allow growers to use isoxaflutole in future weed management programs. Using multiple modes of action that include soil residual herbicides will increase weed management options and help in the stewardship of old and new technologies to slow the selection and spread of herbicide resistant weeds. In 2019 and 2020, a multi-state research project was developed to examine weed control following isoxaflutole applied preemergence alone and when used with a number of different tank mix partners at their full and half labelled rates. There were nine or ten locations conducted in six states in both years. In 5 of 7 locations, Palmer amaranth was completely controlled at 14 days after application when isoxaflutole was mixed with the full rate of fluometuron, prometryn, and *S*-metolachlor. At 28 days after application, Palmer amaranth was controlled $\geq 95\%$ at 6 of 7 locations with the addition of the full rate of diuron and fluridone. The addition of the full rate of diuron and fluridone provided the greatest control 42 days after application at 4 of 7 locations. These results indicate that isoxaflutole applied preemergence alone or in tank mixture is efficacious on

Palmer amaranth and extended control may be achieved when isoxaflutole is tank mixed with a number of currently available soil residual cotton herbicides.