QUIZALOFOP EFFICACY ON ACETYL COENZYME-A CARBOXYLASE RESISTANT GRAIN SORGHUM AS AFFECTED BY APPLICATION RATE AND TIMING. M. Joy M. Abit, Kassim Al-Khatib, Phillip W. Stahlman, and Patrick W. Geier, Graduate Research Assistant, Professor, Professor, and Assistant Scientist, Department of Agronomy, Kansas State University, Manhattan, KS 66506.

Postemergence herbicide grass control is very limited in conventional grain sorghum production due the plant's high susceptibility to these herbicides. The development of acetyl coenzyme-A carboxylase resistant grain sorghum has broaden postemergence grass control in grain sorghum. Field experiments were conducted at Hays and Manhattan, KS to determine the efficacy of quizalofop on acetyl coenzyme-A carboxylase resistant grain sorghum at different application rate and timing. Quizalofop was applied at 62, 124, 186, and 248 g ai/ha at heights of 8 to 10, 15 to 25, and 30 to 38 cm, which correspond to early postemergence (EPOST), mid-postemergence (MPOST), and late postemergence (LPOST), respectively. Grain sorghum injury in the form of epinasty and stunting ranged from 0 to 46% and 3 to 68%, respectively, 1 wk after treatment (WAT); by 4 WAT plants generally recovered from injury. Quizalofop applied at EPOST injured grain sorghum more than when applied at MPOST and LPOST timings. The EPOST application injured grain sorghum 9 to 68%, whereas injury from MPOST and LPOST was 2 to 48% and 0 to 16%, respectively, depending on rate. Crop injury from quizalofop was more pronounced at 248, 186, and 124 g/ha than at the use rate of 62 g/ha. Sorghum grain yield was not affected by quizalofop injury as there were not significant differences in grain yield between herbicide-treated and -untreated plots regardless of rate and timing.

2009 North Central Weed Science Society Proceedings 64:116.