Effect of Glyphosate on Pollination and Seed Set in Glyphosate-Resistant Corn and Weed Species. (C01-wilcut073019-Oral)

Authors:

- W.E.Thomas* - *North Carolina State University*
- W.A.Pline - *North Carolina State University*
- J.W.Wilcut - *North Carolina State University*
- K.L.Edmisten - *North Carolina State University*
- J.F.Thomas - *North Carolina State University*
- R.Wells - *North Carolina State University*

Abstract:

Recent research has shown that registered glyphosate treatments to glyphosate-resistant cotton negatively affect floral morphology and pollen viability. Therefore, similar experiments using glyphosate-resistant corn were designed to evaluate its reproductive response to registered and unregistered treatments. Experiments were conducted in the NC State University Phytotron and three field locations with varieties represented from both resistance events, GA21 and CP4-EPSPS. All glyphosate treatments were applied at 1.12 kg ai/ha. Glyphosate can be applied up to the V8 stage or 30 inches in height. Treatments included an untreated check, a V6 foliar (POST) application, a V10 POST, and a V6 POST followed by (fb) a V10 POST. For the field trials, treatments included untreated check, V4 POST, V8 POST, V4 fb V8 POST, V4 fb V10 POST, and V4 POST fb V10 PDS. Alexander's stain was used to estimate pollen viability. Phytotron experiments had shown that glyphosate treatments negatively influenced total pollen production and pollen viability. In field trials, pollen viability was significantly reduced in both varieties with any herbicide treatment after V4.

Corresponding Author Information:

John Wilcut
North Carolina State University
Crop Science Department
Raleigh, NC 27695-7620

phone: 9195155647
fax: 9195155315
e-mail: john_wilcut@ncsu.edu

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