



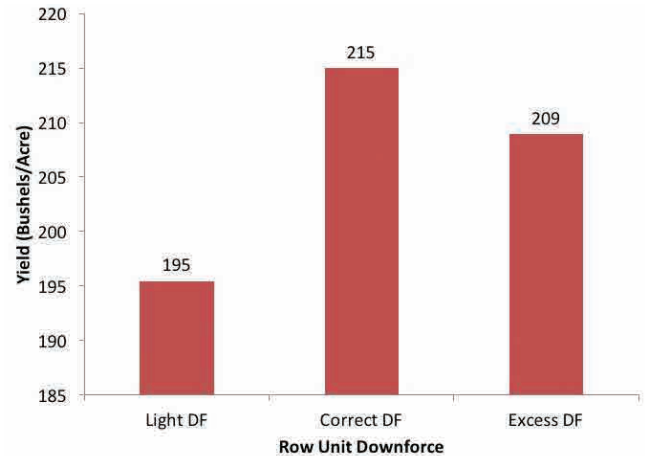
Downforce Study

We compared automatic downforce control using DeltaForce to two common fixed down pressure settings.

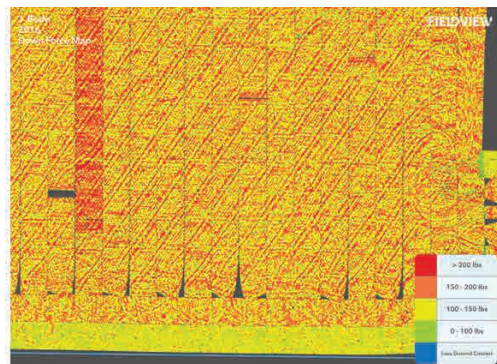
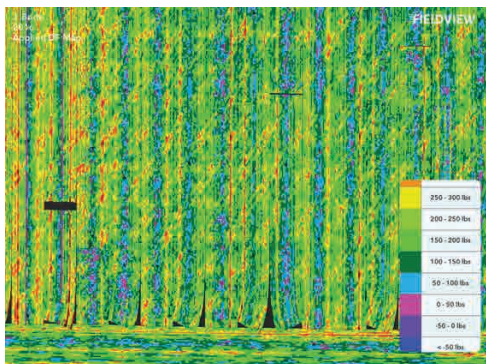
Results: Across six locations*, automatic downforce control improved yield by six bushels per acre for heavy and by twenty bushels per acre for light.

We noted the following additional insights in 2016:

1. Additional downforce is required as seeding depth increases.
2. Different tillage systems require different amounts of row unit downforce.
3. Central fill planters require more downforce on the wings to maintain adequate gauge wheel to ground contact.



Downforce applied (bottom left) to achieve gauge wheel weight (bottom right). It is evident that individual row units must be adjusted independently from one another in order to ensure uniform depth control while avoiding compaction in the row. Also note system response to tillage wheel traffic seen at angle to planter pass.



Equipment Solution: White Planters™ VE series ordered with the DeltaForce down pressure system. Payback: 642 acres of corn**

Singulation Study: We modified seed disks to create doubles and skips in side-by-side plots. This created an average of 91.4% spacing accuracy vs. the control at 99.3%. Seed singulation ultimately impacts plant- to-plant spacing.

* Summary Data from six crop tour sites: Galva, IL; Edgewood, IA; Amboy, IN; New Ulm, MN; Jackson, MN; Estelline, SD

**Assumes five bushel per acre yield advantage at \$4/bushel – option cost on a White Planters 9812VE

