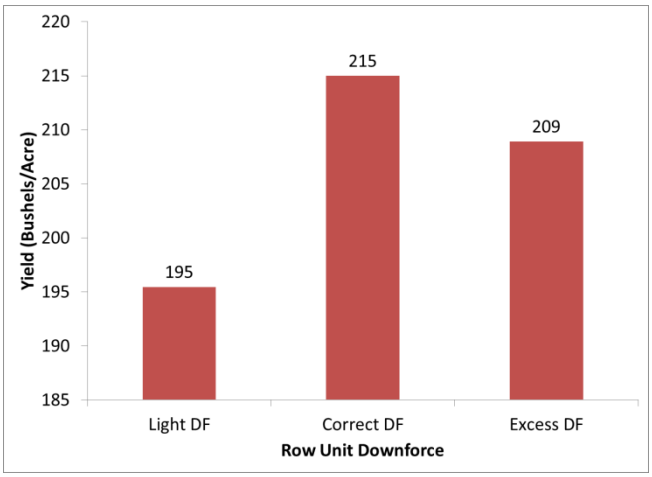
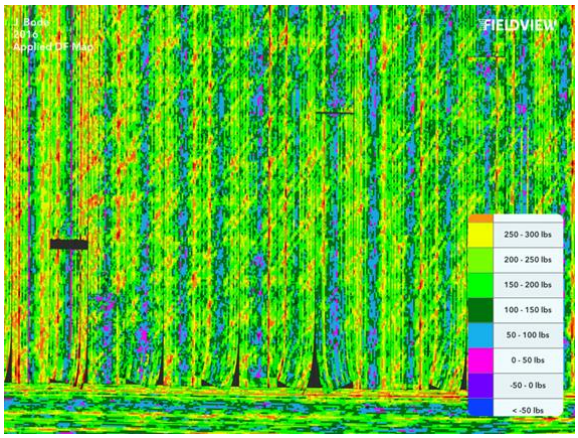
Downforce Study: We compared automatic downforce control using DeltaForce to two common fixed down pressure settings.

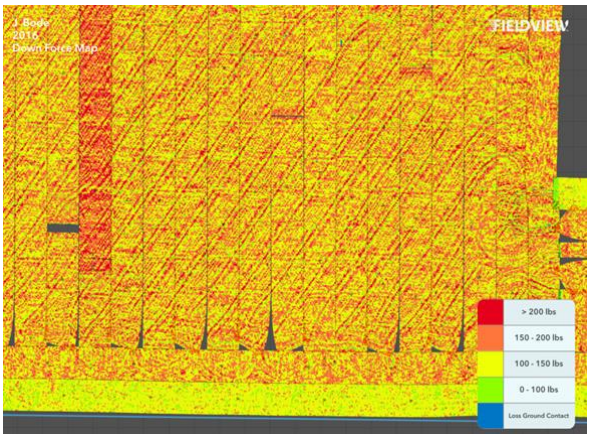
Results: Across six locations* automatic downforce control improved yield by six bushels per acre vs. heavy and by twenty bushels per acre for light.



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.



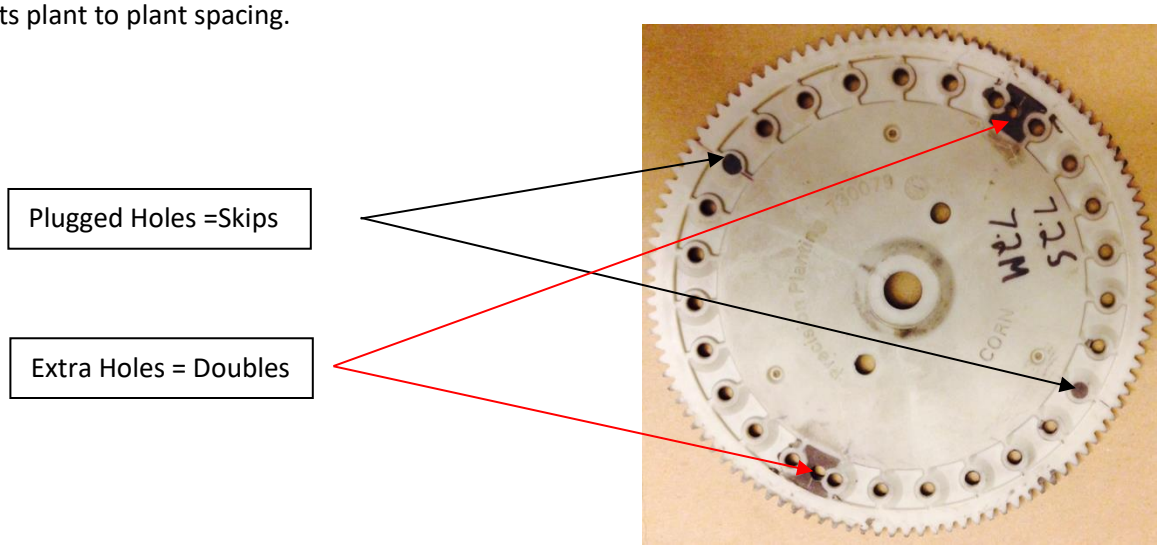


Downforce applied (image left) to achieve gauge wheel weight (right image). It is evident that individual row units must be adjusted independently from one another in order to insure uniform depth control while avoiding compaction in the row. Also note system response to tillage wheel traffic seen at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

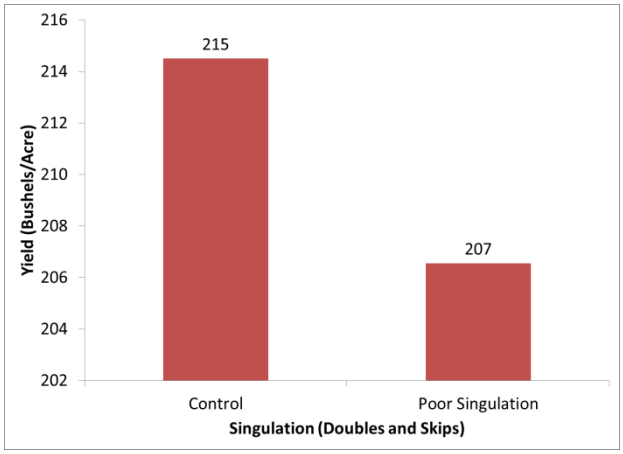
Equipment Solution: White VE series planters ordered with the DeltaForce down pressure system.
Payback: 642 Acres of corn**

** Summary Data from six crop tour sites: Galva, IL; Edgewood, IA; Amboy, IN; New Ulm, MN; Jackson, MN; Estelline, SD*
***Assumes 5 bushel per acre yield advantage at $4/bushel – option cost on a 9812VE planter*

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.



Results: Across six sites* there was an eight bushel per acre yield advantage due to a 7.9% improvement in seed singulation accuracy.



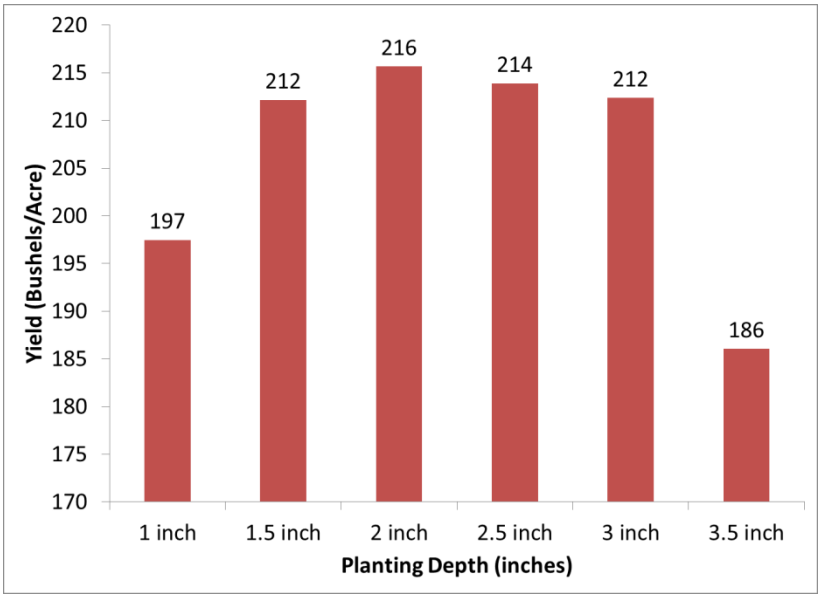
In 2016, White 9800VE series planters that were part of Crop Tour planted over 6000 acres of corn and averaged 99.6% singulation accuracy.

Equipment Solution: White VE series planters equipped with Vset meters and Vdrive.
Payback: $32 per acre improvement in profitability.** Consider trade difference and number of acres of corn grown to calculate acres required to pay for improved accuracy.

** Summary Data from six crop tour sites: Galva, IL; Edgewood, IA; Amboy, IN; New Ulm, MN; Jackson, MN; Estelline, SD*
*** Assumes 8 bushel per acre yield advantage at $4/bushel*

Depth of Planting Study: Six different planting depths were compared beginning at 1 inch and ending at 3.5 inches in half inch increments.

Results: Agronomists have long argued that corn must be planted at least 1.5" deep for adequate nodal root development. This study confirms that notion with yield results.



Planting just ½ inch shallower than the 1.5 inch minimum resulted in a 15 bushel per acre yield loss on average across six crop tour location sites.*

Planting depths from 1.5 to 3 inches deep allowed for uniform emergence and adequate nodal root formation. In 2016, the 3.5 inch planting depth resulted in a 26 bushel per acre yield loss compared to the three inch depth averaged across all location. Soils are colder as depth increases making it harder for corn plants to emerge uniformly. Stand reductions were seen in the 3.5 inch planting depth.

White Planters positively display planting depth at the depth control setting and allow row unit depth control fine tuning by adjusting the bolt and jam nuts as shown in the photo at right.

Equipment Solution: White planters come standard with the most accurate depth control system in the industry. Rows may be calibrated prior to the season so that depth is accurate and known for all rows.
Payback: Up to $60 per acre improvement in profitability.** Consider trade difference and number of acres of corn grown to calculate acres required to pay for improved depth control.

** Summary Data from six crop tour sites: Galva, IL; Edgewood, IA; Amboy, IN; New Ulm, MN; Jackson, MN; Estelline, SD*
*** Assumes 15 bushel per acre average yield advantage when planting at least 1.5" deep compared to 1" deep at $4/bushel*