

Study confirms greater plant variability and potential harvest loss in higher-yielding corn.

Major corn head brands have a problem in higher-yield environments.



SUMMARY

A multiyear study found that stalk variability increased with yield, especially in 200-bu. and higher yield environments. The implications of the results indicate there is more potential yield loss in higher-yielding environments for corn heads equipped with manually adjusted hydraulic deck plates compared to those that self-adjust.

THREE YEARS OF STUDY: CONSISTENT OBSERVATIONS

- Different-sized stalks continuously enter the corn head – plant to plant as well as row to row.
- Higher-yielding areas have greater stalk variability and potential loss than lower-yielding areas.
- In higher-yield areas, row-to-row differences in stalk widths of 1/4 inch and greater were measured 40% of the time.
- The wider the corn head, the greater the potential yield loss due to plant variability.
- In the 2020 study, Drago deck plates automatically adjusted to changes in stalk width of 1/8 inch or greater more than 12,000 times per acre – nearly 3,000 times/minute across the head.
- Deck plate adjustments of 1/2 inch or more were measured to occur an average of 105 times/minute across the corn head in the 2020 study.

Sixty percent of yield loss during harvest is at the corn head. Along with ear bounce, studies have shown that deck plate gaps as small as 1/8 inch between plants and plates can result in a one to four bushel per acre loss.*

Every major corn head brand today features operator-adjusted hydraulic deck plates as a means for managing deck plate gaps and kernel loss. But results from a three-year harvest study questions their actual value – especially in today's high-yield environments and wider corn heads.

"What we've learned is that growers over-estimate the yield-saving ability of hydraulic deck plates in harvest conditions," says Dustin Bollig, farmer and vice president of sales and marketing for Drago. "There is just too much stalk variability to think that a manual hydraulic deck plate adjustment now and then can compensate for the dozens of different-sized stalks running through the corn head at any given time.

"It's a needless source of yield loss."



**"GROWERS OVER-ESTIMATE
THE YIELD-SAVING ABILITY
OF HYDRAULIC DECK PLATES
IN HARVEST CONDITIONS."**

MORE YIELD = MORE VARIABILITY

“Our 2020 harvest research confirmed what we saw in 2019: That there is a direct correlation between stalk variability and yield,” says Bollig. “And it isn’t what most people think.”

“Our analysis of more than 100,000 data points shows that higher-yielding corn – especially 200-bu. and higher – has greater plant variability than lower-yielding corn,” Bollig says. “That’s counterintuitive to what most producers believe.”

“In fact, the number of deck plate adjustments nearly doubled in 200+ bushel corn.

“The high-yield/high-variability correlation is consistent,” he adds. “Not only did we observe higher variability as yields improved in the same field, our data showed higher variability as yields improved from one year to another.”

“What it means is that your best fields have the highest potential kernel loss,” Bollig says.

MEASURING STALK VARIABILITY: WHY IT MATTERS

University research has shown that a gap between deck plates and stalks as little as 1/8 inch during harvest can result in a 1 to 4 bushel per acre yield loss.

Drago has long described the yield-saving benefits of its automatic self-adjusting deck plates for minimizing gaps compared to operator-controlled hydraulic plates.

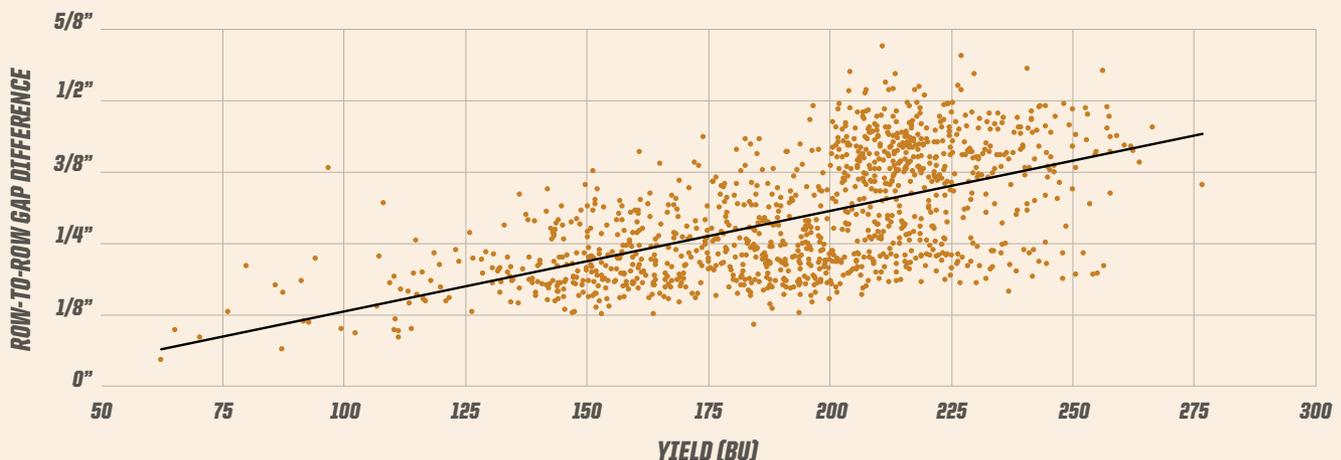
The question has been: How significant is the advantage?

“THE NUMBER OF DECK PLATE ADJUSTMENTS NEARLY DOUBLED IN 200+ BUSHEL CORN.”

To substantiate its claim, Drago conducted three years of field research, attaching electronic sensors from Headsight® Harvesting Solutions** to the self-adjusting deck plates of its corn head. The highly sensitive sensors measured the number and extent of gap adjustments made during harvest.

The study has consistently demonstrated that row-to-row deck plate gaps differ by 1/8 inch or more nearly 90% of the time. In higher-yielding areas, row-to-row deck plate gaps vary by 1/4 inch or more 40% of the time.

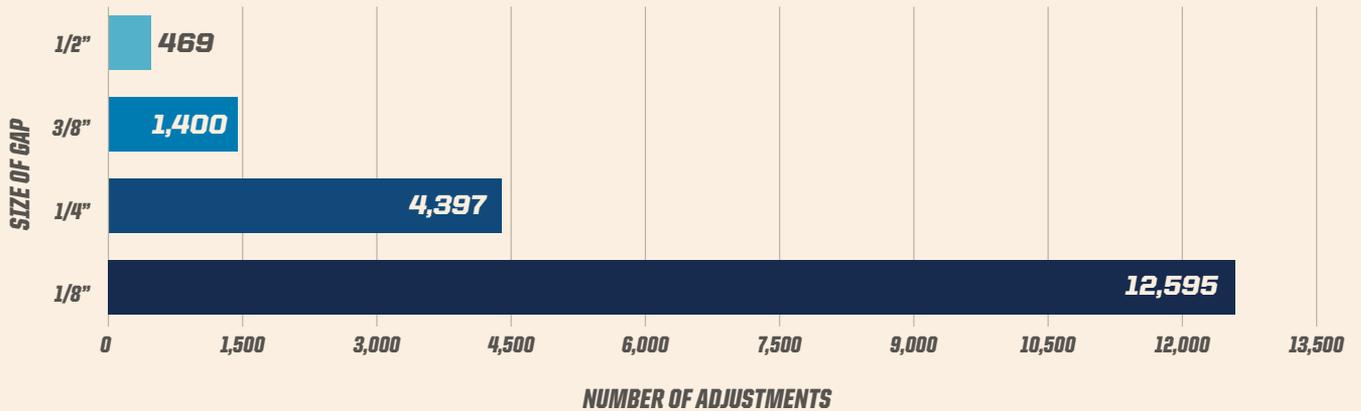
GAP DIFFERENCE BASED ON YIELD



Dragotec 2020 harvest research confirmed that stalk variability increases with yield. Sensors mounted on Drago deck plates measured significantly more variability in deck plate spacing as yield increased.

**To learn more about Headsight Harvesting Solutions, visit www.headsight.com

DECK PLATE ADJUSTMENTS/ACRE



Dragotec research confirmed a correlation between yield and stalk variability – within the field and from year to year. A higher yield in 2020 resulted in significantly more stalk variability.

Drago's 2020 research revealed that its deck plates were making nearly two adjustments of 1/2 inch every second and 47 adjustments of 1/8 inch every second across the corn head.

“SELF-ADJUSTING DECK PLATES DELIVER A SIGNIFICANT IMPROVEMENT TO MANAGE GAPS AND CAPTURE MORE YIELD AT HARVEST.”

“What we've seen is that the automatic self-adjusting deck plates deliver a significant improvement to manage gaps and capture more yield at harvest,” Bollig says. “Often, gap size differences were significant enough that a single deck plate setting across all rows of the corn head could result in small ear loss, let alone kernel loss.”

HYDRAULIC DECK PLATES HAVE BECOME OBSOLETE

Bollig notes that when hydraulic deck plates were introduced nearly 40 years ago, hybrids, plant populations and corn heads were much different than they are today.

“Olimac, the parent company of Drago, actually introduced hydraulic deck plates in 1982 when corn heads were relatively small,” Bollig notes. “They were a significant improvement over the fixed bolted-on plates they replaced, but by the time John Deere introduced their corn head with hydraulic deck plates 13 years later, hybrids and corn heads were changing.

“Olimac recognized the increasing yield loss that occurred from faster dry-down hybrids that were more likely to butt shell, as well as the inability of a single hydraulic adjustment to manage deck plate gaps across rows as corn heads grew wider.

“They moved on to develop automatic self-adjusting deck plates for each individual row to better manage those gaps and protect yield,” he says.

BUILT FOR TODAY'S AGRICULTURE

Three years of Dragotec USA on-farm harvest research has confirmed there is extensive in-row and row-to-row stalk width variability as plants enter the corn head.

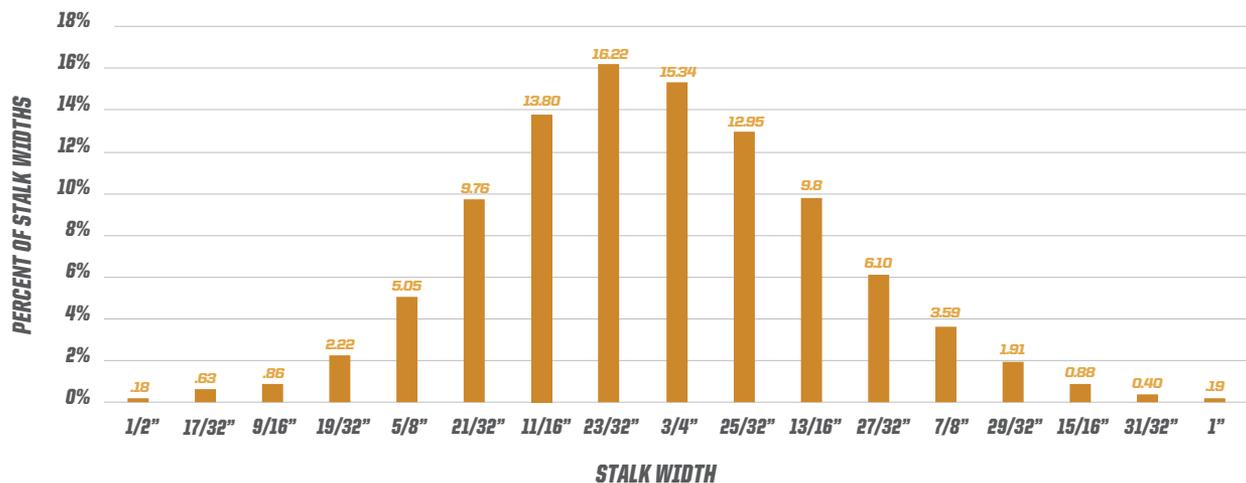
“Considering the amount of stalk variability in the fields we've measured, it's overly optimistic to think that a single deck plate setting is optimum for as many as six to 16 rows across the corn head,” says Dustin Bollig, farmer and Dragotec vice president of sales and marketing. “And, as our research has shown, as yields increase, the problem is only compounded by more variability.”

“In fact, we saw deck plate adjustments of 1/4 inch or greater every second per row in higher-yielding (200+/Bu) corn.

“Our studies demonstrate the need for technologies capable of adapting to changing field conditions. Hydraulic deck plates have become an obsolete technology compared to the automatic self-adjusting deck plate technology available on Drago corn heads today.

“Bushels matter. We know that 60% of harvest loss occurs at the corn head. Producers should be challenging the ways they are losing yield.”

DRAGOTEC HARVEST RESEARCH: PERCENT OF STALK WIDTHS MEASURED



Dragotec measured the percentage of time deck plates were at various gaps. Significant variability was consistent both in-row and across the corn head throughout the study. In fact, hydraulic deck plates set for the most common stalk width would have been wrong more than 80% of the time.

A STUDY THAT'S ONE OF A KIND

The three-year Drago stalk variability study offers a unique insight for what's happening at the business end of a corn head.

It's a study you'll find nowhere else.

That's because no other corn head brand offers automatic self-adjusting deck plates, so there is no

incentive to determine the value of the manually adjusted hydraulic deck plates they market.

Three years of consistent study results prove that no other corn head saves yield like a Drago – or pays you back like one.

DRAGO DECK PLATES ARE CONSTANTLY WORKING TO MINIMIZE GAPS.



DRAGO

GAP ADJUSTMENTS

1/8" = 308
1/4" = 80
1/2" = 10

DECK PLATE OPENING (INCHES)						YIELD
ROW 1	ROW 3	ROW 4	ROW 6	ROW 8	ROW 12	
0.56	0.64	0.81	0.69	0.59	0.64	246 00:34

Visit dragotec.com/fieldstudy21 or scan this code with your smartphone camera to watch Drago deck plates work in real time.



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