Cover Story

Put the heat to harvest

12 ideas that bust harvest bottlenecks and speed your crop from field to bin to put more profit to your bottom line

By Dave Mowitz
Machinery Editor

After years of gathering weather data, creating computer models, and crunching cost figures, John Shutske put a price tag on downtime. And the University of Minnesota engineer found that breakdowns and accidents can be very expensive.

Shutske calculated that a single day of downtime in the best of fall weather conditions knocks $100 to $325 off the bottom line of a typical Midwest 800-acre corn-soybean farm. Those losses escalate as weather deteriorates.

"In a year with 25% fewer harvest days due to bad weather, the cost of downtime jumps to $300 to $600 a day," Shutske points out. "Losses can climb to an extreme of $900 per day if delays interfere with necessary fall tillage (which can delay planting the next spring) or if there is an unusually early snowfall."

Shutske's projections represent the tip of the downtime iceberg. For example, a busted shaft due to a bearing that froze up due to lack of lubrication tacks on thousands of dollars in repair costs. An outdated dryer or sluggish conveying system can cause crop losses in the field and pricey fuel bills at home.

Discover 12 ready-to-use ideas in the following pages that not only cut harvest time but also slash fall costs. And for added measure, here is a bonus idea:

Idea 13: Play it safe this fall. An injury can put you out of commission for weeks and consume a grain bin of income in medical bills. ■

Photographs: Mitch Kezar

Idea 1

Find the sweet spot

Adjust combines to optimum capacity and shave days off of harvest

"Many combines have excess processing (threshing, separation, and cleaning) capacity that isn't being utilized," says Iowa State University's Graeme Quick (above). "So don't be afraid to push combine speed – provided the machine is properly adjusted for field conditions."

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Want to have your cake and eat it too? Then find your combine's sweet spot of operation. Doing so will cut grain damage and field losses, and also put your combine in the sprint mode.

A three-year research project at Iowa State University (partially funded by *Successful Farming* magazine) proves that a fully loaded combine is a happy harvester.

"Adjust your combine to handle a full flow of crop, then run it at high enough speeds or with a large enough head to keep it as full as possible, as much as possible," advises Graeme Quick, Iowa State University engineer. "The result will be more grain-on-grain threshing, less grain damage and losses, and more field efficiency."

Quick has spent years exploring harvesting techniques across the globe. He put that expertise to work at Iowa State, pushing the envelope on combine operation.

In field tests, Quick and his team discovered that keeping a combine fully charged (loaded) doesn't necessarily increase out-the-back losses and certainly improves grain quality.

"Any combine, whether it be a rotary or conventional, has a sweet spot of optimal settings for a given

Online connection

To learn more about many of the ideas featured on these pages, visit Agriculture Online™ **(www.agriculture.com/insider)**. This Internet machine shed offers greater details on story topics, plus you can interact with other farmers regarding time-saving harvest ideas. ■

Idea 2

Automatic greasing saves time, prevents breakdowns

When Ken Knapp was approached to put an automatic greasing system on his Case IH Model 2388, the Magnolia, Illinois, farmer's first thought was, "It's a great idea, but I doubt if it is cost effective."

Today, two years after working with the system, Knapp won't own a combine without automatic lubrication. "In the morning I check the grease reservoir, get in the combine, and go. I'm convinced it has saved downtime by preventing bearing failure."

Until recently, automatic greasing equipment was mostly found on forage and cotton harvesters, and balers. Lincoln Industrial, the only company currently offering such equipment in the U.S., saw the potential in combines and worked with Case IH and John Deere to design systems for their harvesters.

Automatic greasing systems (like the Quicklub) are plumbed directly to grease points and dole out lubricant at set intervals.

The system is fully automated. It utilizes an electric pump that draws grease from a reservoir and sends it through tubing to a manifold of metering pistons. These pistons accurately dole out grease (sometimes as often as every 20 minutes) to grease points.

As a result, critical wear surfaces in bearings and pins are consistently lubricated, and grease seals are maintained, blocking out chaff and other crop contaminants.

Research using automated grease systems in the mining industry has resulted in a 50% reduction in bearing repair.

Lincoln's Quicklube is offered on Case IH 2300 and 2100 series and John Deere STS combines. Installed by a dealer, prices start at $3,500.

For more information, contact Lincoln at 636/305-9581 or www.lincolnindustrial.com. ■