Proper Combine Settings Reduce Grain Loss, Improve Grain Quality

COLUMBIA, MO.

When adjusting the settings on a combine, there needs to be a balance between acceptable grain loss and acceptable grain quality.

Maintaining crop quality, particularly seed coat quality, is just as important as quantity, said Iowa State University Extension agricultural engineer Mark Hanna at the recent University of Missouri Crop Management Conference.

"If you get too aggressive with your threshing settings you can actually not carry as many bushels back up into the grain tank," Hanna said. "You are beating it up enough that you are blowing some of it out of the combine, not just as whole grain but foreign material and dust."

Some producers use a grain loss monitor in the cab, but Hanna says that may not tell the whole story.

"Typically, that grain loss monitor is looking at grain that is coming out over the sieves or back in the cleaning shoe," Hanna said. "For corn and soybean crops, most of the loss is up at the gathering head, so those sensors aren't really telling you anything about that."

About 60 percent of corn loss and 85-90 percent of soybean loss occurs at the header, he said.

Hanna recommends lower rotor speeds, sieve settings appropriate to grain size, and higher fan speeds to start. Settings can then be adjusted as needed in the field.

"We can actually document some yield loss that is occurring because the crop gets beat up so much by the rotor or cylinder," Hanna said. "Unless you are checking behind the combine to maintain reasonably low field loss, there is a tendency to overcompensate thresher settings and you end up penalizing yourself in terms of the number of bushels you're leaving out in the field."

Because there are so many different settings, adjusting them for optimum harvest can be a challenge. Hanna says it is important to adjust settings one at a time.

"Make some diagnoses of what is behind the machine, what's on the ground in front of the machine, and look in the grain tank to see what the seed coats look like," Hanna said. "It really is responding to observations you make, and it needn't take a lot of time to do that. Typically, that first day or two in the field you are doing some other things too, but you need to allow some time to set up for adjustment and then adjust as the season changes." Δ