

Tips on Seed Cleaning

Seed cleaning is a vital step in producing quality seed. *Germination* asked five professionals for their best tips.

WHAT'S THE BEST PIECE OF EQUIPMENT TO USE AND WHY DOES IT WORK WELL FOR YOU?

Marc Randall: A buckwheat screen – it's the best screen to put in your cleaner if you know you have weed seeds that are very small and round. The weed seed will drop through a triangle and the wheat that's long and narrow won't pass through the buckwheat screen, so you won't lose as much wheat.

Don McDowell: In our business the indent and canola spirals do the best job for removing the impurities. Our plant is manually controlled, so you have the visual recognition of a problem and then the experience to fix it. They all have suggested settings, but it takes some experience to control it.

Bruce Mathieu: Over the years, I have found that everybody has their favourite manufacturer for a particular piece of equipment. I think Carter Day International makes the best indent on the market and Crippen Manufacturing makes the best wind and screen.

WHAT IS THE WORST SEPARATION TO MAKE AND HOW DO YOU DO IT?

Rick Rutherford: Separating products of the same size is challenging. Separations like that have to be done on a gravity cleaner where you get down to a specific weight of the product. When you have to get into more advanced ways of separating, rather than just separating something by its length and width, it makes it tougher. An example would be when you try and take wild buckwheat out of canola seed because it's the same size. In that case we use the spiral to get all the buckwheat out.

Don McDowell: Separating durum from barley is a tough one because the indent isn't going to work on that. You have to use the gravity table, but you might have to run it more than once to get it clean.

Marc Randall: The most difficult thing about separating seed is when you have foreign material like noxious weed seeds mixed in. Separating small soybeans in wheat is also difficult, so we use the buckwheat screen for that. When we run the seed over the triangular screen it sifts the good seed from the bad seed.

Bruce Mathieu: Hard wheat out of durum. It's all about patience. We slow our indents down as slow as they'll go and it's a numbers game. We also try to touch up with the gravity, but that only does so much as well. Separating cow cockle or wild mustard from canola is also a challenge. Take your hand screens and see what that incoming sample is, so you can either hold it up or drop it through.

OUR EXPERTS



Rick Rutherford, Rutherford Farms, Manitoba



Don McDowell, Haney Farms, Alberta



Bruce Mathieu, Enchant Cooperative Seed Cleaning Association, Alberta



Jarod Jackson, Dennis Jackson Seed Service, Ontario



Marc Randall, Pioneer Hi-Bred, Ontario



I think Crippen Manufacturing makes the best wind and screen (pictured above), says Bruce Mathieu.

HOW DO YOU AVOID SPLITTING?

Jarod Jackson: Everything we do gets picked up with a Grain Vac – it's a lot gentler than an auger, and then once it comes to us it's handled with a conveyor and a leg. Everything is lined with rubber and the beans never free-fall. Our plant is designed to handle soybeans gently.

Marc Randall: We use easy-let-down spiral chutes. We have used other ones that have a paddle which creates a horseshoe effect as the seeds fall down. We call them easy-let-down ladders.

Rick Rutherford: A tip to avoid splitting on impact would be to put a piece of carpet up. It's hung like a curtain. Instead of the seed hitting the hard metal, it hits the carpet – resulting in less splitting.

Don McDowell: All seeds can split if mishandled. Our seed doesn't go up very high and consequently it's not falling down very far. We don't have our seed falling straight down; it's always going at an angle into another bin or into another cleaner.

DON MCDOWELL CLAIMS "EVERY OPERATOR SHOULD BUILD THREE PLANTS IN A LIFETIME... YOU HAVE TO BE INNOVATIVE IN THE SEED CLEANING BUSINESS." WHAT INNOVATIONS HAVE YOU MADE AT YOUR PLANT?

Marc Randall: The latest innovation for us would be putting in the Pegasus gravity tables. We started running those about two years ago. We're slowly upgrading to the newer models of technology with Pegasus equipment – they're much more user-friendly and much easier to adjust.

Jarod Jackson: We have a colour sorter that's like an electric eye. It has cameras in it and it looks at both sides of the seed. It spits out the ones that look funny. It can pick a dark hilum bean out of light hilum beans.

WHAT IS THE BIGGEST MISTAKE PEOPLE MAKE WHEN CLEANING SEED?

Marc Randall: The biggest mistake is if someone doesn't do their job. For example, if the person working didn't run the trace tares, which passes 50-pound units of product over a conveyor belt, to physically examine the seed to see if it makes our standards. It's another part of our quality control.

Bruce Mathieu: I think it's when people try to run things too fast. Most of the time we're working 20-22 hours a day. Sometimes you have too much to do and you try and push it through, and that's when a poor job is done.

"Every operator should build three plants in a lifetime. You should give away the first one, sell the second one, and keep the third to work with."

– Don McDowell



"It can pick a dark hilum bean out of light hilum beans", says Jarod Jackson about colour sorters such as the one pictured here from Middlebrook.

SEED AND GRAIN CLEANERS FOR THE WORLD



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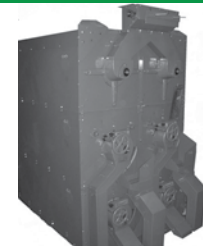
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WHAT'S THE TOUGHEST PART OF SEED CLEANING?

Bruce Mathieu: Getting a good product to start with. There are a lot of guys that bring garbage here and expect miracles, but the machines can only do so much. For example, wheat or durum coming in with barley in the mix – we can only take out so much of that kind of stuff. The farmers want to save back every little seed they can, but they're doing themselves more harm not blowing some of it back into the fields. Growing hard wheat after barley is a problem. Some farmers wonder why they're getting demoted a grade and expect us to fix it for them.

Rick Rutherford: We hand-sieve the product before it comes to the plant and that lets us choose the type of screens we want for that particular sample. When we look at that sample we take a look at what we need to change in our plant. It saves a considerable amount of time, so we know what we're dealing with. Because we clean so many different lot types it makes us prepared for that day or that run.

Knowing what you're starting with is probably one of the biggest challenges. Because we do some fairly large runs of canola and those seeds can be from 40 different growers, it's important to plan ahead so you know what's coming at you.

Jarod Jackson: The toughest part of seed cleaning is all of the varieties we process. We used to do four or five varieties, but now we're doing 30. Cleaning the machines out in between varieties is tough. We spend more time cleaning and setting up each machine for the specific varieties.

DO YOU TREAT THE SEED? HOW WELL DOES IT WORK?

Marc Randall: We have a Gustafson seed treater. It's fully computerized. As the product moves into a bin above our treater, there's a conveyer belt that's about four feet wide by five feet long, sitting on load cells. As the product passes over the load cells it sends a signal down to a computer, and the load cell reading in the computer tells you how many kg/minute are passing over the weigh belt. It adjusts itself in the computer and then adjusts the pumps going up and down according to the weight on the belt. It adjusts the treating pumps to put only so much product per kilogram. You can speed them up or down according to the weight of the product. Our goal is to be within 1% of the label rate.

Rick Rutherford: We have two or three different types of treaters depending on what we're treating. For example, soybeans would be treated in a drum treater. There is no impact area; they're just rolling through the drum. All of our treating is done just-in-time and is the last thing before it leaves our operation. We don't like to store treated seed in storage bins because it leads to the possibility of contamination.

Bruce Mathieu: We have an old treating line-up that we've modified called Gustafson S1000. We treat after the cleaning process, directly onto the farmer's truck. 