Seeding Practices

Producers want more effective ways to get seed past today's significant crop residue and plant at a desired depth and row spacing. Why is this so hard?

There are many steps and inputs to growing a healthy, high-yielding crop. Grant Budgeon believes that in today's high-tech farming business, we may have lost sight of the fact that the smallest ingredient is actually the most crucial.

"The crop begins with the seed," says Budgeon, who farms near Crossfield. "Getting that seed in the ground is the most important step to establishing a crop."

When Budgeon took part in an ACIDF Cropping Initiatives Issues/Solutions Session, he and other producers shared stories about the best way to get a seed nestled in a firm, moist seedbed. Fact is, this used to be much easier and many producers are looking for answers.

Twenty years ago, like nearly all producers at the time, Budgeon made two or three tillage passes on his land before seeding. Today's more conservation-minded minimum-tillers cringe at the memory, but in seeding terms, the practice did create an ideal environment into which to slip the seed. Crops would emerge strongly and with reasonable uniformity.

Seeding into residue poses challenges

Those days are long gone, of course, and today brings a different challenge at seeding time.

"In our area we grow a lot of residue," says Budgeon. "It's been hard to get the seed through the residue at a consistent depth and to make sure the seeds are in consistent contact with each other. The last couple of years this has just snowballed, to the point where I don't see that we can go to zero-till. I don't think there's a drill that works in this country."

Over the last few years, Budgeon has tried hard to find a seeding equipment package that's sophisticated enough to sneak a seed past the residue into a nice firm seedbed. He's researched every combination of drills, openers and knives he could find. He's sweated the details on row spacing and fertilizer placement. He switched – disappointingly and expensively – from his old-school air seeder to a new-generation precision drill, only to end up back where he started.

Based on this experience, Budgeon believes that Seeding Practices in a high-residue environment should the subject of meaningful research. He'll tell you that buying seeding equipment you haven't extensively tested is a good way to lose money. That's why he's calling for a kind of Consumer Reports of seeding equipment, with all the different options reviewed under different conditions and rated.

Solve that, research agronomists, and you'll have gone a long way to making seeding as easy for Grant Budgeon as it used to be. He adds one more seeding-related research idea that could be a real money-maker for producers.

Says Budgeon: "Our barley and wheat seed gets over 90% emergence, but with canola it is between 50% and 60%. We're looking for some way to get that up. To think that you are missing out on 40% to 50% of your potential canola crop, that's something we need to work on."

Earlier seeding brings huge benefits

Jamie Christie agrees with Budgeon in having a *first-things-first* approach to crop production.

"Realistically, if a crop isn't established right, it doesn't matter what you do in terms of spraying or harvest," says Christie, who farms near Trochu. "If you don't have a sound crop to start with, the rest doesn't matter."

At the ACIDF Cropping Initiatives Issues/Solutions Session he attended, Christie stressed the importance of getting a crop seeded as early as possible. He's looking for agronomic research and insight on how best to do this, and from his vantage point, the stakes couldn't be greater.

"Usually, an earlier-seeded crop yields higher," says Christie. "Some guys take 20 or 22 days to seed, but if you can gain 4 or 5 days, that will make all the difference."

If you can get the crop in sooner, you're likely to achieve higher yields. Some might ask, what's a few bushels here and there? Is it worth all the stress? *Yes*, in Christie's view. He explains that the difference between a 47-bushel crop and a 52-bushel crop isn't just 5 bushels of yield. By his calculation, the 52-bushel crop will contribute *three times* the net revenue to the farm, by gaining 5 extra bushels' worth of income for little or no added cost.

With new agronomic tools and information, more Alberta crop producers can get their crop established a bit earlier in the spring. In doing so, notes Jamie Christie, the rest of the growing season will become a lot simpler.

"If you can get a strong, uniform crop established, everything else, from spraying to harvest, will be much easier to manage."

Seeding Practices:

Issues identified by stakeholders

- ideal placement for specific crops
- equipment
- depth control, seeding rates, variable rates, timing
- avoiding residue-related seeding problems, such as hairpin
- row spacing – ideal per crop type
- develop/update water use curves for crops grown under irrigation

Seeding Practices:

Action items: what should be researched first

- develop more flexible seeding equipment to allow farmers to easily adapt equipment to different soil and residue conditions
- expand practices to 'whole' seeding approach, to reduce input costs and environmental impacts
- develop/update water use curves for crops grown under irrigation
- perform seed rate/row space experiments on current crops and soil types to provide tools for farmers to make informed decisions.