Direct-Seed Cropping in the Intermediate Rainfall Zone

Colby Johnson
Conley Farms, Cove, Oregon

History & Change to Direct Seeding

Conley Farms is located in Union County, due east of LaGrande, Oregon, in the Grande Ronde Valley. Our valley has rainfall ranging from 10 inches to 22 inches. Conley Farms is in a 15- to 18-inch rainfall zone. Our ground is flat, so erosion from rainfall and moisture is not a problem. Our main concern is wind erosion, which can cause crop-soil damage. We have more than 12 different soil types on our farm. These types go from dark rich river bottom soil to ash and clay. Our ground can dry out very fast or stay very wet for much of the year.

I am a 25-year-old, fifth-generation farmer on our farm. I am proud to say I am farming a century farm and hope to keep the farm going for another hundred years. I farm with my parents and work closely with my dad. All farming decisions are made together as a family. By direct seeding I hope to better the ground so the next hundred years is more productive than the first hundred years.

When our old drills began wearing out we knew it was time to purchase a new set. That is when we started looking at our options. We were running a set of double disk drills and a set of deep furrow drills. It only made sense to buy one direct-seed drill for both jobs. We were also looking for a more cost-effective way to farm. After much research, we knew we could eliminate most of our conventional farming practices with the purchase of the direct-seed drill. Although this was a new and big step for us, we were willing to try something new and to save money. We also learned this practice would better our ground for years to come. So in 1996 we bought our first direct-seed drills.

Our Cropping System

When we started direct seeding, we knew we had to jump in with both feet. From the beginning we seeded all of our ground with the direct-seed drills. Our first rotations were fall wheat and an alternative crop. Our first alternative crop was safflower. This crop did very well for us except for the lack of rain. From the time it was planted, this crop received only 1 inch of rain. This was the beginning of a 5-year drought. Other crops we have tried are sunflowers, canola, buckwheat, barley, triticale, corn, forage crops, grass seed, alfalfa, grass hay, and various spring wheats, all seeded with our direct-seed drill. By experimenting with new crops, we were trying to better the soil for the next crop and also to make money or at least to break even. We were also trying to find a rotation that would last for 3 to 5 years and also give us the production we wanted. As mentioned before, the major problem was the lack of moisture we experienced during these years of drought. We know that we can grow these crops but the crops are difficult to market. A demand for the crop needs to be closer to our area as freight, cleaning, and storage eat up any profit made on the crop. By planting these crops, we have rotated the ground and helped fight disease. Our ground is healthier now and also grows a better crop. It has broken up the hard pan, letting moisture go down when wet but also come back up when dry.

Equipment

When starting direct seeding, you need a dealer and a dealership that will help you and stand behind you. That is why we purchased a Case Concord 4010. This drill has Anderson Triple Shoot openers on 10-inch spacing. We really like the “ribbon seeding” that these openers provide. They shed trash in the field very well and also give a wide seedbed to fight against weeds and competition. With these drills, we have a 2800 tow- in-between cart that cuts down on compaction. This cart has a one-third, two-third split for seed and fertilizer.
After buying our drills, we knew we were going to have to do something with the stubble to get it to break down faster. After some research, we decided to purchase a Phoenix harrow. This 45-foot harrow covers a lot of ground fast. I believe this is better than a heavy harrow because it rolls over the ground instead of dragging over the ground. It also does a nice job breaking down the straw, but it does not pull it out. This is what we wanted so our straw stays through the winter months. The only problem with this tool was the frame structure wasn’t heavy enough to withstand the fast speeds and rough fields. After the first 2 years, we had to completely rebuild the machine. We replaced all the parts with heavier material for longer life. Along with the Phoenix harrow we also run a 20-foot rotary mower. It is a 2018 John Deere mower that goes over all of our ground. We use this mower before and after the Phoenix harrow. This is a way to remove the leftover stubble during the summer. It also makes the dry stubble into dust so nothing is left to plug up the drills and leave the terrible bumps in our fields.

Another piece of equipment is our sprayer. We have a 765 Wilmar spray machine. This machine is simple to run and covers a lot of ground in a day. This machine is very important because we could go over our ground up to five times a year, depending on the crop. This machine also has a GPS guidance system for more accurate spraying, making it easier to run and less stressful on the operator.

The last and most important pieces of equipment are chaff spreaders and straw choppers on the combines. You must start with the combines to get the chaff and straw broken down and spread properly. Our combines have Vittetoe chaff spreaders and factory straw choppers. Since we added these on our combines, it has saved us many headaches.

Rotations

We have tried many rotations and alternative crops since we first started direct seeding. The crop I enjoyed the most growing would have to be the sunflowers. It grew very well but was hard to sell. Right now we are on a fall wheat and summer fallow rotation and then back to fall wheat. We have found this to work better because of the dry years we have experienced. This lets the ground build up moisture for the next year. Also like we all know, wheat is very easy to market. If and when we start to receive normal rainfall again, we will go back to 100% cropping of our ground. When we do this, our rotation would be fall wheat, spring barley or canola, and back to fall wheat. There are other crops I would like to grow, but until we get a crusher of some sort nearby, it is not profitable to plant crops we can’t sell.

Weed Management

When starting direct seeding, the first advice people gave us was to keep with it. They said your fields might be dirty and weedy the first few years but it will get better. After we started, that is what happened. Because we stayed with it, our fields are now the cleanest they have ever been. By including a good sprayer, we have many more options for chemicals to use. We now can grow a crop and fight weeds using other chemicals we couldn’t use with just wheat. Using chemical fallow, we can kill weeds instead of stirring up more seed. Cheatgrass is our worst problem in wheat, but with Maverick we can control this weed better. We are starting to use Clearfirst wheat to battle cheat grass. This new seed has worked very well for us in this area. Other weeds we fight in our stubble are broadleaves. We are finding we may have to spray an extra trip, but it will kill the weeds.

Residue Management

Residue management starts directly behind the combine. That is when you either will, or won’t have headaches in the year to come. I believe this is the most crucial step in the direct seed process. We spread our chaff with chaff spreaders and chop our straw with straw choppers. With both of these, we get an even spread of our residue early. After the combine, we will pull the Phoenix harrow to start the breakdown process of the stubble, leaving it there for winter. Going through the winter with the stubble intact will let it collect snow and rain to trap the moisture. By seeding time, our fields are both soft and damp to germinate the seed quickly. After coming out of winter and spring, we will wait until the heat of summer to mow our fields to get rid of the stubble. Then we will give the
ground another pass or two with the Phoenix harrow before seeding. We have tried many different ways to work the stubble so we don’t have big “speed bumps” in our field for years to come. With this method, I think we have found a system that works well for us with fewer headaches.

Our Advantages to Direct Seeding

The biggest advantage to direct seeding is fewer passes over the ground to save money. In the business today, we need to farm the cheapest way we can with the biggest return to the land and for us. I think the answer is direct seeding. We have cut our farming costs with less summer tillage. We also have fewer costly breakdowns on our equipment and less winter maintance. Our ground is also getting better. It has a softer feel when walking across it and extensive earthworm activity. We feel when the ground is alive underneath, it will reap rewards aboveground. Another advantage is being able to trap our moisture with the stubble. Since the last few years were dry, this is a plus at planting time. Even though we have had many changes, we are on track for a better future. Direct seeding has let us work closer with our ground and in the end come out ahead.

Advice to New Direct Seeders

My advice to new direct seeders is to stay with it. If you want to try this process, you need to stay on course. It will take a few years before you see the benefits, but when you do, it will be worth it. How much ground you want to do at first is up to you. When we began, we did all of our ground. Whether you do all or some, it is a step in the right direction. As for giving advice on how to begin, that is up to the farmer. There are so many different ways to direct seed: the many types of drills, the crops, what works on your farm. It has taken us many years to get a rotation and process that work for us, and they will probably change several times in the future. The main thing is to start direct seeding and keep doing it. Don’t be afraid to ask questions of other direct seeders. That’s how you learn, from other direct seeders.