

Managing Fertility & Rotations: A Producer's Perspective

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My wife and I operate a family farm in the SE corner of Saskatchewan, and we are in the corner!!! We live 1 mile from the US, the land of government programs, which are not subsidies, and we are 3 miles from MB, the land of lower school tax and better crop insurance.

We operate a grain farm of about 2800 acres; although my wife will argue that we have a ranch because we have three horses I will counter that by saying that the horses don't count because they are on the wrong side of the balance sheet.

Our farm is in the Dark Brown to Black soil zone, a sand, sandy loam to a loam texture (all in the same field). Average rainfall of 7 to 8 inches, with a 5-year supply in the last 2 years.

I remember a windy spring day about 25 years ago; I was seeding wheat on summer fallow with a press drill. My dad came to the field with more seed. He called me on the radio and asked me where I was. I said I'm not sure; I'm in the field heading north I think I'm close to the headland. The dust was blowing so bad all I could see was the drill marks beside the tractor. I Knew then that we needed a better system, but at the time the drills were all we had.

In the late 80's air seeders showed up in our area and in 1989 I bought a JD 610 seeding tool with a 777-air cart. It was 12" spacing, single shoot with 16" sweeps and mounted harrows. Wow what a machine, it did a good job of seeding, most of the time. With direct seeding into summer fallow or standing stubble I had good moisture for germination and with my light soil the harrows provided enough packing, most of the time.

Weak points:

Left the fields rough, in high trash areas the machine was prone to plugging.

Uneven emergence, if the weather was dry after seeding the seedbed would dry out and I would get uneven emergence mainly with oilseeds.

Good points:

Time Management, the airseeder was fast, I was able to cover more ground in less time (expand the farm)

Moisture conservation, I started to notice that I was growing as good a crop on stubble as on summer fallow.

About 1992

Moisture conservation led the move to continuous cropping, I started banding most of the fertilizer in the fall and placing a starter blend with the seed.

About the same time I purchased a self propelled combine and started straight combining cereal crops and flax.

Perennial Weeds, along with continuous cropping came a new weed problem, I started to do Pre-harvest application of glyphosate and spring burn offs. Now quack grass, sow thistle and Canada thistle are minor problems.

1999

Bought a Seedhawk seeder.

12" spacing

Dry fertilizer

I place all the fertilizer beside the seed in one pass.

I have even consistent emergence.

I'm still using the machine, I can't wear it out.

Managing Fertility and Rotation

My Crop Rotation

I use a four-year crop rotation:

1. **Cereal**, Winter Wheat, Fall Rye or HRSW
2. **Oilseed**, Flax
3. **Cereal**, Oats or HRSW
4. **Oilseed**, Canola

In the future I would like to move to six-year rotation with another year of cereal and a year of peas, right now though with the price of peas I don't think this is the year.

Chemical Rotation

My crop rotation allows me to rotate Grass Herbicides between Group 1, 2, 9 and 10.

For Broadleaf Herbicides I rotate between Group 2, 4, 9 and 10.

I don't have a chemical resistance problem that I know of.

My crop rotation provides good

Residue Management

When I changed from conventional tillage to direct seeding and continuous cropping, Residue Management became a problem and still is. My Crop rotation alternates between high and low residue crops. Residue Management starts a year before I seed a crop.

1. **Spring Burnoff** Control the early weeds.
2. **Vigorous Seed** Start with a strong crop. A competitive crop is the best weed control I have.
3. **Fertilizer Program** Feed the crop, keep it strong.
4. **Post-emergent** Control more weeds.
5. **Pre Harvest** Helps to dry the crop and any weeds in the crop.
6. **Combining** The combine is the best tool I have for spreading straw and chaff. Combining late at night when the straw is tough can really create problems for seeding the next year. When combining at night if I see the straw behind the combine lying on the stubble like a blanket I shut down. The extra hour of combining that I get in will create a big headache for me next spring at seeding.
7. **Harrow Straw after combining** will sometimes help to spread straw. Sometimes late in the season or under poor combining conditions you may have to use the harrows. If harrowing is necessary try to harrow as close to the combine as possible. If the straw sits overnight it settles into the stubble and you will have a hard time to get that straw to move.

Disease Management One of the best and cheapest tools I have for Disease control is a good crop rotation.

Timing of Seeding My crop rotation changes my seeding dates from year to year. HRSW-very early seeding, Canola-early to medium seeding, Oats and Flax-medium to late seeding and fall crops in the fall. Changing seeding dates helps me to control weeds at different dates from year to year.

Crop Fertility

Soil Testing In general I soil test a field every two years. If I get strange results from a soil test I will test that field every year.

I use an independent company for testing, I think using your fertilizer dealer to do soil tests, is like asking a barber if you need a haircut.

Regardless of whom you use, a soil test provides a good return on investment. As fertilizer prices get higher a soil test becomes even more valuable.

Aggressive Balanced Fertilizer Program I'm aggressive with fertilizer, I try to push the envelope but at the same time I have to keep an eye on the economics, I try to get at least a 2 1/2:1 return on my fertilizer investment.

The company I use for soil testing makes nutrient recommendations based on crop response to each individual nutrient and economics of the crop grown. A balanced approach to nutrient recommendation.

In the last three years I have noticed a change in my soil fertility. Fields that I expect to see low in nutrients are higher in nutrients. I have fields where I used to apply 60-70 lbs of nitrogen to grow a 50 Bu crop of HRSW, now the same fields only require 30 lbs of nitrogen.

I contribute this change to nutrient cycling, the organic matter on the surface is breaking down, years of direct seeding is starting to payoff and now with nitrogen so expensive it is nice to see that benefit.

My fields are softer more mellow and full of earthworms. My seeder pulls easier through the soil. After a heavy rain the water soaks away quickly.

Three years ago I bought some land that had been in a crop / summer fallow rotation. This land was hard, very hard. The seeder pulled heavy. After seeding the land was rough. After a rain the water would run into the low areas and drown out the crop. These new fields really highlighted how much I had accomplished with the soil on fields that I had direct seeded for years. It was like a pat on the back for a job well done.

Now you have all heard of **Horse Whispers**. A horse whisperer breaks horses, not in a forceful aggressive manner, but with kindness in a slow gentle manner. The whisperer earns the trust of the horse and the horse wants to work with the whisperer. In the end the whisperer meets his objective, to tame the horse.

I am not a horse whisper although the animals trust me and follow me, but I think they follow because I'm carrying the oats.

You and I are like the Horse Whisper we work with an animal a living organism. Not a horse our soil a living organism. We tried to use steel and brute force to break the animal but that didn't work. Now we use a slower, kinder, gentler manner. In time we will meet our objective to tame the animal.