
Winter Wheat Production in the Non-Traditional Areas

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While winter wheat production in Alberta has a long history it has only really been since the advent and adoption of direct seeding that we have seen winter wheat production move into the Parkland areas of the province. The opportunity to keep standing stubble in the field after seeding has meant a much better ability to catch and maintain snow cover, something that is critical to the consistent success of this crop. While interest by new growers has been there, adoption of the crop has been limited by what I would deem a spring crop mentality and by lack of recognition of what winter cereals can bring to a farming operation.

The easiest way to describe this spring crop mentality is to give you an example. I am a company that is going to offer to you, the farmer, a new CPS wheat to grow called Marvel This CPS wheat has a maturity that is 2 weeks earlier than anything currently on the market. It has been proven successful as a dormant seeded crop. Yield is within 5% of current varieties. This variety has the ability to stop wild oat germination and therefore requires



no wild oat herbicide. This variety also has superior quality to present cps varieties. An identity preserved contract program has been setup that will give producers two options. It will allow producers to deliver at harvest at a \$.15 bushel premium over market or will allow producers to wait for a call which will pay you an additional \$.25 bushel plus protein premiums. The question given the above is how many growers would seriously look at growing this variety? Yet if we asked the same question of how many producers would consider growing winter wheat which has all of the same attributes you would likely get a different answer. The above also illustrates that in our crop production mix we need to look beyond our current narrow view which wants to only compare yield and price. As producers we do not plant the whole farm to the crop that shows the best return per acre. While we can understand crop rotations and the impact on the farm as it relates to spring crops, few farmers in the parkland understand the interrelationships between spring and winter crops simply because few have that experience. Just as pulses have shown their value as part of a farming operation, winter wheat can provide value by offering new ways to both reduce risk and add options.

So as a producer looking at winter wheat we need to try and understand what winter cereals provide that our current cropping mix cannot.

Cost reduction

The opportunity to farm more acres without additional expenditure.

TABLE 1

Basic fixed machinery cost for a direct seed farm in the Parkland

4 Wheel Drive Tractor 360 Hp	3 years old	\$150,000.00
Direct seed Air drill 40 Feet	2 years old	\$100,000.00
SP Sprayer small or used		\$80,000.00
Or 120 Hp tractor plus Pull sprayer		
Large SP combine, New		\$300,000.00
Or 2 Medium sp Combines used		
Number of acres 2500		\$630,000.00
Fixed Cost per acre	\$252.00	
Borrowed Money 7%	\$44100	
Interest	\$17.64 per acre	
2 weeks to seed at 185 acres a day		
Add 500 acres winter wheat at no additional expense		
Fixed Cost per acre	\$210.00	
Interest	\$14.70 per acre	
	\$2.94 per acre difference	

Reducing fixed cost has basically added somewhere between 1/2 to 1 bushel per acre to whole farm.



Harvest Expense

Ideal

Straight cut standing crop dry

Definite possibility with winter wheat, reduced chance with other crops related to maturity and climate.

Options

Pre harvest cost \$10.00 per acre \$5.00 application \$15.00 per acre

Natural air drying

Natural air drying efficiency is related to temperature, humidity and air flow

Average outside air temperature drops about 5 degrees per month from August through October

Present electricity rates mean it costs about \$6.00 dollars a day to run 5 HP fan

At the highs of 2 years ago that would be close to \$10.00 per day

If we have to use natural air to dry winter wheat we must consider the following

Less cost because we are drying with warmer temperatures and longer days

Spread out fixed cost because we can use fan to dry other grain.

Hot air drying

Influenced by Grain temperature

Outside temperature

Lower cost to dry winter wheat or no cost

Combine performance and cost of operation

Like many items on the farm we just assume the cost of a combine is part of doing business. There is a need to recognize that hours on a machine impact both resale value and maintenance costs. We also need to recognize that while we can't dictate the weather we can improve our combine performance by moving the harvest window to earlier in the year.

Things to consider

Combine capacity

Large combine with 30 ft header at 4 mile per hour 90 % efficiency 13 acres per hour

Hours per day of operation

4 hours 52 Acres

6 hours 78 Acres

8 hours 104 Acres

10 hours 130 Acres

12 hours 156 Acres

Assume 10 days harvest weather in August at 12 hours = 1872 acres

Assume 10 days in Mid October at 3.5 Miles per hour an 8 hour days = 920 acres

Cost per acre per combine hour

Custom rates \$180.00 hr 60 bushel crop

30 ft straight cut header



Speed	Acres per Hour	Cost per Acre	Cost /bushel
2 MPH	7.2	\$25.00	\$.41
3 MPH	10.9	\$16.51	\$.27
4 MPH	14.5	\$12.41	\$.20
5 MPH	18.18	\$9.90	\$.16.5
6 MPH	21.8	\$8.25	\$.14

Quality issue

Just as moving harvest earlier in the season can improve harvest efficiency and reduce costs it also can impact quality. If we seed all our crops in the spring we have to make compromises in terms of which crops are seeded first as well as the fact that we cannot seed the whole crop in a week. Compressing seeding also impacts harvest

Impact of loss of quality. Prices based November 26, 2003

Crops	Yield/Bushels	Grade	Price	Gross/ acre	Loss/Quarter
Canola	40	#1	\$8.00	\$320.	
Canola	40	#2	\$7.66	\$306.40	\$2176.00
Canola	40	#3	\$6.75	\$270.00	\$8000.00
Barley	75	Malt	\$3.13	\$234.75	
Barley	75	Feed	\$2.57	\$192.75	\$6720.00
HRS Wheat	60	#1	\$3.89	\$233.40	
HRS Wheat	60	#2	\$3.78	\$226.80	\$1056.00
HRS Wheat	60	#3	\$3.61	\$216.60	\$2688.00

Additional Considerations comparing spring and winter cereals

Moisture utilization

Winter wheat can impact cropping in 2 ways

By not working the fields in the spring we conserve _ in moisture

By harvesting in August if we limit re-growth we have a longer period of moisture recharge for the following crop

Herbicide use

Winter wheat is known for its competitive nature and thus reducing the cost of chemical in the year of production. Generally wild oat control is not needed and broadleaf control is generally only needed for winter annuals. This competitive nature also plays a role in future crops by promoting cleaner fields with less weed seeds in the soil. The growth habit of the crop also provides management opportunities by allowing early August pre harvest to control thistle.

Stress

As producers expand there acreage to survive and do more with less equipment, risk levels increase. Capital outlays of hundreds of thousands of dollars on Inputs are dependant on a successful harvest. Delays on the start of harvest mean higher stress and greater likelihood of weather impacts on harvest. Compressing harvest into late September, October create long hours in tough conditions which can take there toll on both body and machines.



Agronomy

The following is tips and pointers on successful winter wheat production in the Parkland. The previous discussion of benefits and opportunities growing winter wheat are only applicable if we grow the crop with the proper management. I strongly encourage producers especially new growers to do their homework and get the basics down right. There are numerous challenges to successfully including winter wheat in the rotation.

Rotation

One of the biggest challenges to winter wheat production in the Parkland is having land ready to seed in late August, early September. The goal of producers should be to plan a rotation that allows the crops to complement each other verses creating compromises. The following are choices that fit that role

Fall seeded Canola or early spring seeding of early maturing canola

While many producers have tried and gone away from fall seeding canola it is a natural fit in rotation with winter wheat. Early seeded canolas such as In Vigour 2733 also provide an opportunity to harvest in Time. Canola provides the ideal stubble cover over winter because of the tall strong stalks that excel at catching and holding snow. Canola also has the additional benefit in that the ground warms quicker in the spring and encourages early growth.

Malt barley

Malt barley is another natural fit because producers generally want to seed early to improve the chances of getting the quality they need. This is new opportunity to allow producers to produce wheat after barley without so much concern about volunteer barley in the wheat. Experience has taught producers that a heavy harrowing after harvest to simulate growth and the competitive nature of winter wheat in spring help to keep barley in check.

Silage or Green feed Ground

This is an excellent choice as silage can be cut low and still provides sufficient stubble to plant into. The shortfall in this situation tends to be that cattle producers tend not to be wheat producers or sellers of grain. A new consideration might be that winter wheat tends to produce lots of straw and that is becoming a more valuable commodity.

Winter wheat on Winter wheat

While I would not present this as a given, I currently am into my second year of this rotation with reasonably good success. Disease pressure maybe of a bigger concern under wetter conditions and there is some unevenness of maturity because of volunteers but it does provide good stubble and earliness of planting.

Peas

This is the rotation of choice for many producers because it is usually the first spring crop harvested. While many producers have had success it does come with a higher risk level. The lack of stubble and the blackness of the stubble tend to create fields that are exposed when windblown. They also tend to bare off earlier in the spring when the crop is most susceptible to damage. While winter wheat has a remarkable ability to compensate for a poor stand it still will only produce an average type yield.

Hailed or dried out ground

While it is impossible to use this option as part of a crop rotation., it does provide producers with an option they might not other wise have An important note in this situation is to make sure you spray out the green growth before seeding to avoid the concern of Wheat streak mosaic.



Variety

While there a reasonable number of varieties available to producers there are some key considerations when choosing a variety. Choice of variety will depend on 2 variables. These are making sure the type you choose has suitable winter hardiness for your area and determining your end use market. In the parkland at present if you want to move into the milling market your choices are Bellatrix and CDC Osprey. Choices for the feed market are numerous and you want to look at varieties that suit your region. Falcon is an example that is suited to the higher moisture, high yield areas because of its straw strength. A number of new varieties will be released over the next few years. You should note that the trend is the move to varieties in the select milling program because they allow more options to producers.

Seeding

It's important that producers understand some basics at planting because this is critical for success. The fact that we are seeding at harvest means producers need to be properly prepared. Established growers have found that by preparing before harvest to be ready to go when you get a break that seeding can be accomplished without too many headaches. Second producers need to understand that seeding at the end of August is different than seeding in spring. Seeding conditions are often less than ideal and good packing and seed to soil contact are harder to achieve. This is important because early establishment is important to allow crops to develop before colder weather and colder soils stop this growth. While it is often stress that seeding shallow is critical it is also important to realize that our goal is to get early development to establish a healthy crown. Established growers comment how little moisture is needed to germinate winter wheat and so if moisture is not within the top 1.5 inches of the surface your best bet is to seed at the proper depth and weight for rain. Some seeding equipment will allow for making trenches which allow going deeper to moisture while still keeping seed within an inch of the surface. As we move later from our optimum seeding date we can expect to find poorer establishment with higher seedling mortality poorer stands. This also leads to later maturity.

Fertility

Winter wheat responds similar to spring wheat and uses a similar fertilizer program. It's important to have some phosphate with the seed for winter survival. Placing all your nitrogen at seeding or broadcasting some in the spring is a matter of choice. Some varieties are susceptible to piebald which can be an indication of a lack of nitrogen. Winter wheat will respond well to higher levels of nitrogen. Winter wheat will also respond to copper if the field is lacking.

Harvesting

Winter wheat is somewhat susceptible to sprouting in the swath so care should be taken at harvest. The crop is an excellent choice to straight cut.

Marketing

The trend in marketing winter wheat has been to either move the wheat early off the combine into the feed market or to participate in the new select milling program. Early delivery into the feed market often provides cash flow, the freeing up of bin space, and can often find premiums by getting to market before harvest pressure brings prices down. Looking at street prices on feed wheat over the last number of years would seem to indicate about a \$7.00 Tonne or \$.20 bushel drop in prices from harvest pressure. The select milling program provides opportunities to be paid both storage and protein premiums and is hoped will bring us back to our historic price trend which values winter wheat close to a number 2 HRS wheat. It is likely that this will move to a select class of winter wheat in the future.

Conclusions

The intent of the above presentation is to try and help producers understand that winter wheat is more than just another cropping option. Producers need to appreciate that their operation is made up of numerous



management decisions that all impact and interrelate to each other. Our goal must be to best use the resources we have to achieve the best net returns. We do that by reducing costs, improving yield and quality (price). We must manage risk when we have the opportunity and put in place systems that are sustainable over a long period of time. While our farming operations have survived on improved efficiencies through technological improvements, in our particular short season environment there is a limit to how far we can go. If we are to move to the next level, we need to be looking seriously at those opportunities that let us work with Mother Nature instead of just trying to conquer it. Winter wheat provides a whole new bag of options and opportunities that we otherwise wouldn't have. If as producers we can understand that then we can move beyond focusing on the negatives and put in place a plan that ultimately rewards the whole farm.