

Yield Manitoba Can Help

Doug Wilcox,
Manitoba Crop Insurance Corp.

Successful crop production depends to a considerable extent on selecting the best varieties for a particular farm. Unfortunately, the choice of which variety to grow hasn't become easier. For example in 2001 there were at least 49 RS wheat varieties and over 94 argentine canola varieties reported grown in Manitoba — each sown on at least 500 acres. Surprisingly, likely due to market rationalisation finally kicking in, this is actually a reduction in canola varieties grown from 2000. For comparison purposes, in 1991 there were only 11 RS wheat varieties and 15 argentine canola varieties reported grown on at least 500 acres.

As a farmer you know your land, climate, production resources and production commitments — with a little additional information you are the best one to decide which varieties you should grow. Variety selection is as much an art as it is a science and the best farmers know how to do it. My experience is that farmers generally go through a five-step process to select the varieties they want to grow. The steps are (1) identifying market availability; (2) identifying field limitations; (3) evaluating variety performance; (4) selecting a source; and (5) putting it all together.

Identifying Market Availability

The market a farmer is selling to directly influences the choice of variety grown. For example if a farmer is growing field peas for the livestock or feed market then they will need to plant a Yellow or Maple type. If they are growing field peas for human consumption then they will need a Green or Marrowfat type of pea.

With the advent of more-and-more niche varieties, specialty contracts, and GMOs, it is increasingly important that farmers establish whether a market will even be available for a variety they are considering growing. We are in a new era where buyer preferences are often changing. This means an increased emphasis on variety selection for access to certain markets. Farmers must know their market and be prepared to grow the varieties the market wants.

Keep in mind that most markets see yield as the farmer's concern and quality as theirs and they want the best. Varieties that you prefer because of yield may not be what the market wants.

Identifying Field Limitations

In terms of risk there is more to a variety than yield. Consideration of disease resistance, quality parameters, lodging, days to maturity, and other parameters is critical for successful variety selection. A yield advantage means nothing if you can't get the crop off the field and into the bin, or sell it at an expected price because of quality concerns.

It is important that farmers establish the agronomic features that are important for variety selection on a particular field in their farm. These often include, but are not limited to, consideration of crop and herbicide rotations, soil type and fertility, and disease and insect risk. These considerations can then be prioritised and the top two or three concern categories can be selected. Unbiased variety characteristic information such as that in *Seed Manitoba* can be used to identify the varieties that can best deal with these top field concerns. Once the varieties have been narrowed down in this way a producer can then look at yield performance.

Evaluating Variety Performance

It seems that one common way farmers choose varieties is simply to look at one favourite source of plot data (like *Seed Manitoba*) and base their decisions on "what did best last year". This approach is unlikely to be as successful as a more refined approach.

A more successful approach would be to start by assessing the varieties you grew on your farm in 2001. How did they perform? What were the weaknesses? What were the strengths? What variety characteristics and yield performance do you need for 2002? The *Yield Manitoba* information fits in here, allowing you to benchmark your yield against your neighbours — without reliance on peer testimonials or marketing hype. Your own experience will help you select varieties that will be successful on your farm. However, to gain the most benefit from that experience you need to document it — guesses about yield or overall performance are not as good as accurate measurements.

The next step is to study comparative variety performance summaries — the *Yield Manitoba* information fits in here as well. Regardless of whether the performance information you are interpreting is *Yield*

Manitoba, *Seed Manitoba*, or some other source, the same interpretation principles apply.

Relative yields for newer varieties or even established varieties in particular regions can be based on very few site years or acres of data. Most farmers are well aware that such performance information must be used with great caution — since the conditions next year, or at other locations, may elicit a much different performance.

What is less well known is that performance results from any single location — even if close to home, don't cut it on their own. Farmers need to look at data covering as many sites as possible to confidently predict what variety will work best at their farm. This is because growing seasons everywhere are highly variable and not much happens weather wise at other sites in the province that couldn't happen at any particular farm.

This does not mean that individual site data is unnecessary. Individual site data will show you whether a variety is a stable performer across a wide range of locations and environments. Common logic tells us that we can't expect the same yield from the same variety across the entire province of Manitoba. However, be wary of varieties exhibiting an abnormally high mix of highs and lows — this indicates variable performance and such a variety is likely one you will want to avoid. For many farm operations yield consistency can be more important than maximum yield potential.

Correctly interpreting performance information to select a consistent high yielding variety is one of the most important decisions a farmer can make. For example, in 2001, the average difference in field performance between high yielding and low yielding commercially produced varieties was 26 bu for RS wheat and 18 bu for Argentine Canola. It was even more for oats where a 34 bu difference occurred. This amounts to a considerable difference in gross profit per acre by simply selecting the right seed.

Yield is what makes farmers money. A farmer's cost of production is essentially fixed once they decide to plant an acre of crop. Anything a farmer can then do to increase yields without raising costs

continued on next page...

increases profitability. That why it is critically important that farmers evaluate yield trials and surveys every year.

Despite the importance of yield, farmers must also constantly remind themselves to balance a varieties yield potential with other features. Have in mind not just yield results, but also what particular variety characteristics are going to work best in your operation. Good features to be considered include those that help you to manage your harvest, improve quality, or reduce disease or weed pressure.

Selecting A Source

Variety turn-over is greater than ever — resulting in the situation where some of this years tried and true performers may not even be around next year. This also means that many suitable varieties have limited data and farmers need to trust in company recommendations even more than in the past. In those instances farmers are likely taking less risk if they stick mainly with varieties from companies with a proven track record of successful varieties and farmer support. Additionally, farmers may minimise their risk by growing varieties with limited data on only a small portion (say 20%) of their acreage. To make it a fair test, farmers should give the new varieties the same care as the main crop.

A farmer may select the best variety for the farm, but if the seed purity or viability is not there, then all the effort used in determining the best variety could be for nothing. If a farmer cannot obtain good quality seed of a desired variety they might be better off picking an alternative lower yielding variety that has good quality seed.

Putting It All Together

Profitable results start by carefully picking varieties to meet your needs based on the concepts discussed previously and following through with the economics of production until the production is sold. This is increasingly an issue when comparing biotech crops with conventional crops. Only by following through with the economics will a farmer truly know which variety is the best for their fields.

Farmers need to keep in mind that the true value of the seed purchase is not the price paid in the spring, but rather the value of the crop in the fall. For example, all other things being equal, a \$15/acre variety of canola that yields four bushels less per acre (approximately \$20 lost) is more costly in the long run than a \$25/acre canola variety (costs \$10/acre more).

Farmers should never commit a large acreage to a new variety until they have seen solid, unbiased, performance data over many sites and years. Farmers can reduce the risk associated with unpredictable growing conditions by growing more than one variety of any particular crop. Variety selections should be complementary with different maturity, stress tolerances or disease characteristics.

When a farmer has made all their purchases and is ready to plant they need to recall that the sins of planting will haunt them all season — any mistakes made at planting will usually be permanent. As farmers pull into their fields this spring they should spend an extra few minutes checking the planting rate, operation of the residue managers, planting depth, etc. Farmers can optimise their chances of profit by giving the variety they have selected every chance for successful establishment and growth.

Farmers operate in a business environment with tremendous and increasing uncertainty and risk. Having the information and tools for reducing this uncertainty and risk is essential. Variety genetics drives crop production, so Manitoba producers need information and tools to be able to select the best genetics for their farms. *Yield Manitoba* information fits in by making available unbiased on-farm variety information and in turn reducing risk, increasing profitability, and contributing the overall competitiveness of Manitoba's agricultural sector.