Is there such a thing as high-yield, low input farming?

Weathering the perfect storm in farming

by Laura Rance, Farmers' Independent Weekly

Oakbank — Within the past year the Van Ryssels have seen white-capped waves in their corn crop, four-bushel, five-dollar canola and the construction of a brand-spanking new 3.5 million gallon liquid manure storage lagoon.

Suffice to say there was a lot more money going out in 2005 than there was coming in to this combined dairy and grain operation east of Winnipeg.

Like many other farmers in this province, Neil, 61, and his son Jeff, 30, are battening down the hatches in a bid to weather out what has been likened to "the perfect storm" in farming.

A convergence of low prices, poor yields and rising expenses related to environmental regulation and energy costs is rolling over farm operations with the force of a tsumami.

Farmers can't duck the weather that has robbed them of break-even yields for their grain operation in the past three out of four years. Last year the Van Ryssels had to buy in most of their dairy herd's feed as well.

They can't raise market prices that have made it virtually impossible for them to pencil out a profit on most of the crops they grow for export — if they even get a crop.

Nor can they evade tightening environmental regulatory pressures. The Van Ryssels have already moved to expand their liquid manure storage capacity to 1.5 years. They are expecting incoming regulations will end their practice of applying solid manure to their land over the winter.

That means constructing more manure storage and likely hiring a commercial operator to spread it for them during the summer. "If we have to do it in the window we have between spring and fall, there's only so many things that you can do and only so much equipment you can have that justifies doing it for what it's worth."

It's a direct increase to their cost of doing business that they will not recoup. As if that wasn't enough, the cost of energy for fertilizer and fuel has more than doubled in the past five years.

"If we can't grow it with less, maybe we shouldn't be growing it."

— Neil Van Ryssell

Third option

So what's a farmer to do?

a) Grumble and wait for things to improve.

b) Grumble and quit.

c) Grumble and start heaving high-cost, high-risk management practices overboard — replacing them with measures designed to give the farming operation more buoyancy.

The Van Ryssels, who with their partners Rosalie and Faith were named 2005 Farm Family of the Year by the Red River Exhibition, are pursuing the third option.

To say they're unhappy with their predicament would be an understatement — especially when it comes to regulatory pressures they feel place too much of the burden of cleaning up Lake Winnipeg onto farmers' shoulders.

But they are also taking a brutally frank look at how they farm, assessing whether their assumptions about what it takes to produce a profitable crop hold true in the current environment.

"The other alternative to staying in business is to lower costs," says Neil. "We're certainly going to be putting on less and less nutrients and changing rotations to keep away from fungicides."

It's a delicate subject. Farmers have long been warned that simply cutting fertilizer and weed control expenditures will almost surely reduce their yield potential.

That is what worries Jeff. "Suppose you try putting on less fertilizer. We know the minimum requirements for each crop to make breakeven yields," he said. "The reality is when you cut costs through less fertilizer you get less on the other side too."

But in an environment in which the value of the protein in a tonne of wheat is about the same as the cost of the nitrogen it took to produce it, achieving yield doesn't necessarily equate with profit.

The challenge facing farmers right now is finding ways to cut costs without hurting their bottom line. Is there such a thing as high-yield, lower-input farming?

Research and extension agronomists answer that question with a qualified yes. There is, but not without some changes.

It starts with an evaluation of why farmers make the input decisions they do on their land base. But from there it moves to an assessment of cropping and marketing options, both conventional and alternative with a view towards reducing risk.

Kitchen table economics

Here are some of the discussions taking place across the Van Ryssel kitchen table.

• They have traditionally applied around 130 pounds of nitrogen to their canola crop. Although their yields over time have averaged around 40 bushels per acre, they have also grown 50-bushel crops and four-bushel crops. Lately, the low extremes are more frequent than the high ones.

Their conclusion: under these conditions, something has to change about the way they grow canola, the way they market canola or whether they even grow canola.

In their case, it could be all of the above.

"The number of inputs that we've been accustomed to putting in, the risk is too bloody high," Neil says. "If we can't grow it with less, maybe we shouldn't be growing it."

• They've started growing more soybeans, which produce their own nitrogen, on some of the acres previously designated for canola.

But they are also paying close attention to all the hype about biodiesel made from canola. They've heard of farm-scale crushing technology out of Europe that would allow them to produce some of their diesel fuel and use the protein meal for their dairy herd.

"We are certainly going to look at it," Neil says. "We're in probably the best possible position to do that — because the meal stays right here and we feed it right here. There's no transportation costs."

• As for other crops, they're re-examining the cereal component of their rotation, perhaps incorporating more winter cereals into the rotation.

The grain side of the operation currently produces corn and barley silage to feed the dairy. They also rotate their forage crops through the farm's land base to capture the benefits of alfalfa in the rotation for improved soil tilth, fertility and weed control.

In addition to considering the production of their own fuel, they'll be looking for ways to further reduce tillage on their farm.

Continued on next page

Continued from previous page

Crunching the numbers

The Van Ryssels found participating in the Environmental Farm Plan process has been helpful on two fronts. It helped them identify some of their vulnerabilities with regards to water supply and quality and it qualified them for the Canada-Manitoba Farm Stewardship Program, which helped finance just under one-third of the cost of their new manure lagoon.

They haven't done detailed calculations of how some of their alternative ideas might affect their budget yet.

But others have.

Researchers in the Plant Science Department of the University of Manitoba have identified several opportunities for farmers to reduce costs through better management of their Number One input — energy. (See story page 15)

Between 40 and 50 per cent of the energy required for today's grain cropping systems is for nitrogen fertilizer. Another 20 per cent goes into fuel to run farm machinery. "Given this, the best strategies for energy savings involve using less nitrogen fertilizer and liquid fuel," says agronomy professor Martin Entz.

He says the biggest opportunity for gains in energy efficiency on Manitoba farms is through better integration between livestock, forage production and annual cropping systems — a benefit already well understood by the Van Ryssels.

"The livestock portion of our operation certainly gives the grain end far more flexibility than we ever had," says Neil, who notes producing feed for the dairy herd adds value by reducing transportation costs.

There are agronomic spinoffs too. "There aren't many crops that will open up soil drainage better than alfalfa," he says. They enjoy better fertility, lower weed control costs and improved soil structure by rotating the alfalfa through their entire land base.

Entz likens restricting a farm's land base to annual cropping options to "rearranging deck chairs on the Titanic."

"If we want to make big gains in energy we have to step back from the field and look at the whole farm and the whole region. There are big benefits that come from integration."

If farmers don't have the capacity within their operation to integrate annual cropping with livestock systems, they may need to work more closely with their neighbours, he said.

More neighbour-to-neighbour co-operation will be fostered by the new environmental regulations as well.

Don Flaten, a soil scientist with the University of Manitoba, notes incoming phosphorus regulations, designed to reduce the loss of phosphorus into waterways, will have a dramatic impact on how manure is applied to Manitoba soils.

Because of the ratio of nitrogen to phosphorus in liquid manure relative to how much is used by crops, the phosphorus will build up more quickly in soils than nitrogen.

To keep that ratio in balance, some soils will only tolerate manure for one year in four, which will increase the amount of land a livestock producer will need to access. "You are going to see situations where people who have not been using manure are going to start to use more manure," Flaten says.

"On the flipside you are going to start selling nitrogen fertilizer to livestock producers because they are only going to be putting on their manure once every three or four years and they are going to be putting on nitrogen fertilizer to (maximize crop production and) take the phosphorus levels down.

"Getting livestock operations and crop producers together is part of creating this integrated solution," he said.

The nice part about finding ways to ride out the storm is that these same strategies will pay dividends when times get back to normal in farming. "That's if we can ever figure out what normal is," Van Ryssel says.