

La Ferme Bois Mou St-Félix de Kingsey, Qc

By Larry Mastine, JVP

La Ferme Bois Mou is situated in the picturesque municipality of St. Felix de Kingsey, Québec. Mario Lefebvre & Denise Joyal are the fifth generation to work this land and produce high quality dairy animals. The farm is in the Bois Francs region, well known for its beautiful countryside and its dairy production. Mario and Denise continue on what Mario's father, Robert worked to build on from his father before him. Cropping is on 290 acres comprising 57 acres of alfalfa, 15 acres of corn silage, 55 acres of grain corn, 55 acres of cereal, and the balance in grass hay.



This family has been a leader in the dairy industry for decades. In 1968, Robert Lefebvre (Mario's father) purchased a Brillion seeder (the third one bought in Quebec). Mario still uses this seeder today to seed his alfalfa and grass mixtures. In 1983, Robert won the Canada's Outstanding Young Farmers' Program, Québec section and was also the National winner. In 1988, the family was presented the "Master Breeder" award for their continued development of high quality Holstein cattle. The tradition continues as the herd has a classification of 1 - Ex, 24 -VG, 27 - GP, 5 - G. This while maintaining a herd average of 10,500 KG with 4.0% fat and 3.4% protein. There are usually

50 cows lactating to produce a daily quota 57.4 KG of fat.

Efficiency is the key to the success of Ferme Bois Mou. Mario is always calculating the return on investment of all farm decisions. In 2003, Mario decided to try the PICKSEED approach to growing quality forages. The idea of adding other grasses to his alfalfa and timothy mixture was very intriguing. After comparing the cost of the top Pickseed varieties to those of his previous supplier, his decision was made with ease. The result of adding smooth bromegrass, meadow bromegrass, and especially tall fescue to the alfalfa and timothy base mix has been excellent.

The feed value of this combination has been great. But what has been the biggest surprise to Mario is the amount of grass in his third cut haylage. "In the past, the third cut had almost 100% alfalfa, but the tall fescue never stops growing! The yield of our third cut is at least 30% higher than with alfalfa and timothy alone."

The same year Mario tried a bag of PICKSEED Leafy® silage corn to compare to his dual purpose hybrid. He was so impressed with the yield and the milking performance of his herd that the farm has seeded only Leafy® corn for silage since. Differences in silage quality are tougher to notice when the silage is processed, however nothing has come close to the yields obtained using varieties such as ExAmple. The seed cost per acre is also a big advantage with Leafy® corn since seeding rates are 13% lower than

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How much dandelion is in your alfalfa?

Jay Hackney MSc., V-P Research & Product Development

At our Lindsay location we have a 2002 seeded alfalfa variety comparison trial that is showing lots of stand decline in some varieties, and much less decline in others. When alfalfa stands decline and the fields thin out, dandelions move into the space once occupied by the alfalfa. Older and thinner stands have more dandelions.

Newer, improved varieties such as Leader, Starbuck or 2065MF have enhanced persistence and show less stand thinning or decline than other varieties. This is quite evident when you look at a head-to-head field comparison.

The question we asked ourselves was – when a farmer harvests a poor stand with many dandelions, how much of what he harvests is actually alfalfa?

We did repeated sampling in our 2002 alfalfa trial to answer the question. We measured the wet weight of alfalfa and of dandelion in each plot and calculated the percentage alfalfa in the total harvest for different varieties. The results showed statistically significant differences among varieties for % alfalfa in the harvest.

Variety	% alfalfa
Leader	91
Starbuck	91
PS2065MF	89
5312	70
HybriForce 400	69
Magnum IV	58

Leader alfalfa was 91% alfalfa, while HybriForce 400 was only 69% alfalfa. In other words, in 1 t of harvest in a field of Leader you have 910 kg of alfalfa. In 1 t of harvest from a field of HybriForce 400 you have only 690 kg of alfalfa.

Leader is providing $(910/690 \times 100) - 100 = 32\%$ more alfalfa.

You may harvest lots of what seems to be good forage but much of what you harvested may actually be dandelions.

The fact that dandelions are almost as good in forage quality as alfalfa is some consolation perhaps, but keep in mind that they are slower to dry down, they are higher in moisture content and lower in protein and don't yield.

The Benefits of Shorter Rotations which include Alfalfa

Jay Hackney MSc., V-P Research & Product Development

It's no secret that the key to crop profitability is production per acre. Since fixed costs remain the same and variable costs increase just slightly when you aim for higher yield, then it's clear that the higher the yield, the higher the profit. Given the dramatic increases in fertilizer costs this year compared to last, it is especially important to review your cropping practices to ensure you maximize profitability by maintaining high yield and making best use of nitrogen credits. In this article we will look at the benefits of including forages in a rotation and how shorter rotations seem to produce the greatest yield benefit.

The benefits of alfalfa in a rotation are clear. First there is a simple 'rotation effect' which is the improvement in yield due simply to having a legume mix in the rotation (not doing continuous cropping). This can be worth 10-15% more yield. Then there is the benefit of the residual nitrogen that a forage crop which includes legumes

can return to the soil to benefit the following crop & reduce your cost of production. There is an article on the N credits in this issue of the Informer. Plowing down a good stand of alfalfa can provide 160lb of N-credit, which is most of what next year's corn crop needs. Alfalfa and other forage crops have a particularly beneficial effect on improving soil structure by adding organic matter, by penetrating the soil deeply with taproots (in the case of alfalfa) which improves drainage, and by improving soil aggregation and tilth. Having alfalfa based forage in the rotation will break disease and insect cycles (corn rootworm or soy cyst nematode for instance). Alfalfa is deep-rooted and will scavenge deep nitrogen and reducing nitrate loss which might otherwise occur with more shallow-rooted crops like cereals or corn. Dan Undersander (University of Wisconsin) points out that "perennial crops reduce erosion from cropping systems due to their providing continual ground cover". Not even no-till checks erosion like

having a perennial crop in the rotation. A hay crop in rotation can also help control weeds, especially now when we see lots of use of RR crops. Horsetail (*Equisetum arvense*, marestail) can be a problem in corn/soy rotations, but add alfalfa to the plan, cut 2-4 times a year and the horsetail is gone. Undersander also mentions that "a couple years of forage in a six-year rotation creates "stability" in the system. Income is more consistent year to year with forage in your system". Numerous studies also point out that forages will improve soil water holding capacity and therefore make subsequent crops more able to tolerate dry conditions. The advantage of a shorter rotation (seeding year plus 2-3 production years) is that yield of alfalfa and of corn (whether grain or silage) is kept as high as possible and so is forage quality. Looking at the Ontario Forage Crops Committee brochure show that average first production year yield of alfalfa is 10.5 t/ha while second production year

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conventional hybrids (28,000 compared 32,000). Most years 15 acres of corn silage produces too much silage for the farm's 120 head!

With rising corn prices, Mario decided to return to growing his own grain corn in 2007. The consistent high yield

index of SilEx Bt in the Québec government trials (114, 113, 124 percent in 2007, '06 and '05 in the CRAAQ early trial) since 2003 gave Mario confidence that no matter the growing season, the yield would be there. And the SilEx Bt didn't disappoint, with a yield of approximately 4 tonnes/acre and 22%

moisture harvested before some people had harvested their high moisture corn.

The combination of top seed genetics, top livestock genetics, along with top farm management assures the continued success of the Lefebvre family at Ferme Bois Mou.

The Benefits of Shorter Rotations which include Alfalfa

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yield is 10 t/ha (an average of 10.25 t/ha). Third & fourth production years average 8.9 t/ha yield, a drop of 1.35 t/ha or 13% less yield. (These OFCC yields are for the check, or control varieties only). You wouldn't plant a corn variety you knew yielded 10-15% less than what you know you can get, so why settle for 10-15% lower alfalfa yield?

The younger stand also produces more N credit, which in turn cuts cost and boosts corn yield.

So the advantages of rotations are many, and the advantages of short rotations are higher hay yields, higher forage quality, higher corn yield, reduced pesticide use and better N credits.

Younger stands are also more likely to overwinter well. It is true that shorter rotations mean that you will be seeding more often, but a University of Wisconsin study on rotations shows that "spending a little additional may cause a larger increase of income and result in greater profit" (D. Undersander).

The Value of Alfalfa N Credits and rotations

Matt Anderson, Research Associate PICKSEED

Without a doubt we are experiencing some exciting times within the corn industry with record sales and continuous talk regarding ethanol, new technologies, etc. However, Dan Undersander, a forage specialist from the University of Wisconsin, reminds us that the need for alfalfa in your crop rotation and the value of alfalfa itself is a key factor in your overall production system.

Stand Density	Medium/Fine Soils		Sandy Soils	
	Regrowth after last cutting			
	> 8"	< 8"	> 8"	< 8"
	lbs Nitrogen/acre			
Good, > 4 plants/ft2	190	150	140	100
Fair, 1.5 – 4 plants/ft2	160	120	110	70
Poor, < 1.5 plants/ft2	130	90	80	40

table published in the Winter 2005 edition of The Forage Informer (taken from a presentation made to our staff by Dan Undersander). It shows the expected legume credits that can be obtained from various stands of alfalfa on medium/fine and sandy soils. As you can see, even a "fair stand" with over 8 inches of regrowth on medium/fine soils provides a majority of the nitrogen that would be needed for the following year's corn - 160 lbs. Many farmers are adding no N to a corn crop following plowing of a good alfalfa stand (or using only starter N) and achieving satisfactory yield results. These N credits continue to carry

The need for alfalfa in your rotation is common sense. It provides legume credits to other crops in the rotation

and with the ever increasing costs of nitrogen; the value of this is quite substantial to the producer. Below is a

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The Value of Alfalfa N Credits and rotations

Matt Anderson, Research Associate PICKSEED
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on into the second year after plowdown as “fair” and “good” stands on medium/ fine textured soils can provide up to 50 lbs/ acre of N. Red clover and white clover can provide similar nitrogen credits to alfalfa if they’re well managed.

Alfalfa in your rotation provides yield increases in addition to fertility and legume credits. There is a clear rotational benefit where you can expect 10-15% more corn yield following a legume, compared to corn after corn. Undersander has mentioned that when a producer thinks about farm rotations, they should think about the yield of each crop in the rotation; “we want high yield of each crop, each year, but we additionally need to consider how the rotation can reduce overall costs and how each crop can enhance the yield and profit of other crops in the system”.

Undersander and the University of Wisconsin looked at the economic value of short term alfalfa rotations compared to long term rotations on an average dairy farm. They did the comparison for the whole farm crop production system and expressed the results on an average profit per acre. They looked at a farm with 300 acres of cropland and either 3 or 5 year alfalfa stands (including the establishment year) in combination with state average yields, assuming the following (keep in mind, these are \$ estimates from 2005 and prices have changed substantially since then, but the overall model is still applicable today):

200 acres of alfalfa

New seeding, 2 tons/acre yield at \$80/ton Dry Matter

Established stand, 4 t/a yield at \$80/t DM
60 acres grain corn, 120 bu. At \$2.50/bu
40 acres silage corn, 18 t/a at \$25/t

For a 5 year rotation the base profit per acre is higher than with a 3 year rotation due to higher costs and slightly less yield, because more land is in new seedlings. However, added income in the 3 year rotation comes from increased corn grain yield, increase corn silage yield and an increased subsequent alfalfa yield. Sometimes spending a little additional can result in an increased income and greater profit.

In summary, the short 3-year alfalfa rotation showed greater profit per acre due to:

- Higher subsequent alfalfa yield from shorter rotations (\$17.00/acre)
- Higher forage quality from weed-free early production year stands (\$36.00/acre)
- Reduced pesticide use; no rootworm control on first year corn (\$15.00/acre)
- Increased nitrogen credits (\$2.25/acre)
- Increased corn yields (\$15.45/acre)

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