

Flax as a Niche Crop

PFI has completed three years of research on flax as an alternative crop. The research has been led by ISU's **Mary Wiedenhoef** and **Margaret Smith** along with graduate student **Sarah Carlson**. Over the course of the project, farmer cooperators have included **Doug Alert** and **Margaret Smith** (Hampton), **Art and Rose Behrens** (Carroll), **Ken Choquette** (St. Marys), **Paul and Karen Muge** (Sutherland), **Dan and Joleen Parizek** (Tama), **Ron and Maria Rosmann** (Harlan), **John Veith** (Mt. Pleasant), and **David and Norma Williams** (Storm Lake).

There is now a Flax Production Guide for Iowa, ISU Extension Publication PM-2020, available at



Flax harvest on the David and Norma Williams farm

www.extension.iastate.edu/Publications/PM2020.pdf. The bulletin encapsulates what we have learned about how to grow flax in Iowa.

The decision whether to grow flax depends on the answers to questions like "How does flax fit in my cropping system?" and "What are the economics of raising flax?"

Flax is often compared to small grains like oats, triticale, or barley. It yields better when it follows nitrogen-fixing crops, as do the small grains. In 2007, **Art and Rose Behrens** (Carroll) compared the effects of turkey manure compost and liquid hog manure on flax (Table 12). Although the trial did not pick up yield differences that were statistically significant, the trend with both amendments was for greater yields compared to the control treatment. Biomass of weeds and of the alfalfa underseeding followed the same trend as flax yields, but the differences were small and not statistically significant.

Like the small grains crops, flax can be a good nurse crop for establishing green manure crops or hay. Figure 7 shows that in fact underseedings of red clover or alfalfa helped to hold down weeds following flax harvest. This is important because flax itself is not competitive with weeds and could contribute to a build-up of the weed seedbank. Figure 8 shows that overall, on the PFI farms the underseedings did not affect the yields of flax.

What about economics? The following estimates are based on organic flax because there is no buyer for conventionally grown flax in Iowa. The ISU agronomists on the flax project have developed a production budget using ISU standardized costs for: field cultivation, harrowing, drilling the flax, cultipacking, windrowing, combining, baling straw, hauling and trucking. Land was priced at \$140 per acre and labor at \$10.50 per hour.

Table 13 shows that under these assumptions, and using the average cooperator yield of 1,112 lbs of clean seed per acre (approximately 19.9 bushels) and a price of 35 cents per pound of cleaned, organic flax, the projected net profit is \$145 per acre for the grain alone and \$196 per acre if the straw is also baled and sold. For comparison, with 2007 ISU oat production costs of \$180 per bushel, a 100-bushel yield, and a \$3.50-per-bu price for organic oats, that small grain would net approximately \$170 per acre.

So organic flax is in the same profitability range as organic oats. For many farmers, that is no good reason to raise flax. Others may find themselves closer to the flax buyer in Cherokee than to an organic oat market. Several PFI

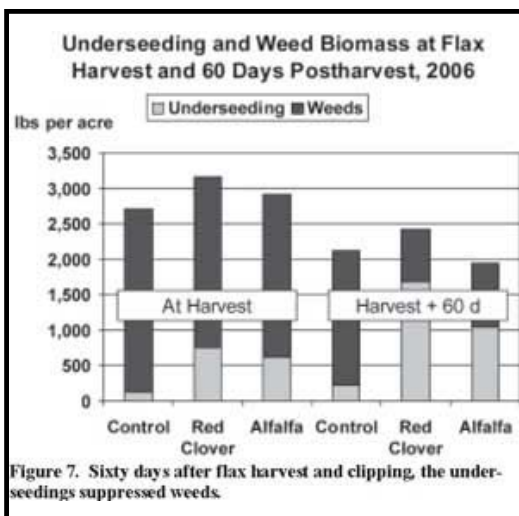


Figure 7. Sixty days after flax harvest and clipping, the underseedings suppressed weeds.

Treatment	Mean Yield	Stat. Group
Liquid Hog Manure	855.5	a
Turkey Compost	815.9	a
No fertilizer	785.4	a
No statistically significant yield differences. Overall treatment Pr>F = 0.0962		

farmers are marketing their flax locally and achieving premiums that to them justify raising flax.

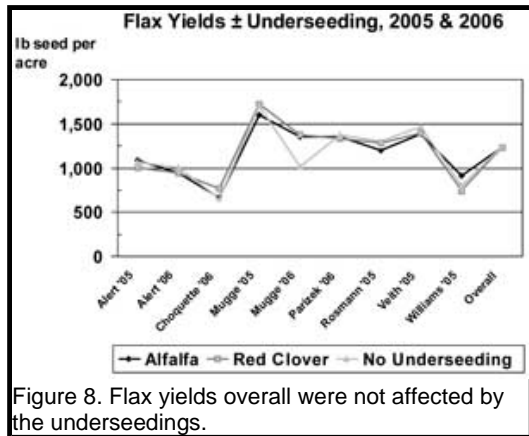


Figure 8. Flax yields overall were not affected by the underseedings.

OFR Flax yield (gross lbs)	1,236	
Flax % foreign material (FM)	10	
Flax clean pounds = (100 – FM) x yield + 100	1,112	
Cleaned flax grain price/lb	\$0.35	
Gross Seed Crop Value		\$389.22
Total Cost of Production Minus Baling		\$244.23
Net Profit, Seed Production		\$144.99
Gross Straw Crop Value		\$60.00
Total Cost of Production with Baling		\$252.83
Net Profit, Seed and Straw Production		\$196.39
For comparison:		
Oat conventional production costs, 2007		\$180
Typical Oat Yield		100
Typical Organic Oat Price		\$3.50
Net Organic Oats		\$170