



FUEL OIL: An expeller squeezes out oil on one side and meal on the other. Mary Carol Frier is expected to return to Ag Progress Days with the oilseed press demonstration.

Pressing profit

By **MARY CAROL FRIER**

TODAY, you can mechanically press oil from canola, camelina or other oilseeds right on the farm. And that oil can be used to run equipment, plus fire boilers and heaters.

But can you can realize a sensible return on the investment? Producing oil for fuel may be your primary on-farm use. But marketing or using the meal co-product will make or break the project. Here's a look at what to consider:

Step one is comparing the production costs and returns against other crop alternatives. When considering canola or camelina, Cooperative Extension and university trials offer a general understanding of performance. Canola has been grown in most of the Northeast.

Mechanical expeller-press technology is proven and reliable. It typically presses 83% of the oil from the oilseed. The remaining meal has about 4% fat in soybean meal and 11.5% fat in canola meal.

Total capital investment varies, even assuming that a building to house the equipment and power already exists. Typical capital costs consist of the press, an extruder (needed for soybean processing), centrifuge or filtration system, material handling equipment and oilseed, oil and meal storage. Maintenance and operating costs also must be included in the project budget. And don't overlook depreciation, financing costs, plus management time and overhead.

Crop farm analysis

In commercial oilseed processing, the processing cost plus profit is no more than 2 to 4 cents per pound of oilseed. Typical crop farmers could almost never compete with a margin that narrow.

And you still must market and distribute the products. You also may have to guarantee meal nutritional value and oil quality to your customer. This marketing cost is estimated at 3 cents per pound of product.

The crop farmer normally sells the oilseed crop outright and considers whether the added profit from pressing oilseeds results in a viable return. The

Key Points

- Canola, camelina and soybean oil can be pressed into fuel and meal.
- A mechanical expeller may have a five-year payback on crop farms.
- Potential fuel and feed savings on livestock farms may exceed \$25,800.

profit/cost Excel model below shows that the additional profit gained from processing is \$35.52 per soybean acre and \$53.58 per canola acre — compared to selling the crop outright.

The model requires inputs of market prices and production costs, as well as field yields, press efficiencies and the

processing cost per pound of oilseed input. The pressing cost is an estimate for pressing 1 ton per 24-hour day for 300 days per year. That means that 300 tons of oilseed (approximately 245 acres of soybean or 240 acres of canola) are processed in a year. These numbers suggest it might take five years to recover the investment.

Livestock producer considerations

Cost savings from on-farm production and use of oil and meal can be substantial. Because energy and feed costs are usually outside the producer's control, stabilizing or reducing costs via the fuel and meal should be a key objective.

In the canola example, the market

value of protein feed meal is \$165; for the crude non-degummed oil, it's \$276.60 per acre. After deducting production and processing costs, the cost savings is \$121.06 per acre. Considering that 240 acres of canola are required to feed this pressing operation, the annual cost savings would be about \$29,000.

For an acre of soybeans, the cost savings is \$105.34 per acre. Assuming 245 acres of beans processed annually, the cost savings would be about \$25,800.

The Excel profit/cost model is available via e-mail request at mcfrier@yahoo.com.

Frier, a certified crop adviser, consults on farm cost-reduction and biofuel production projects.

Cost/Profit Oilseed Analysis

Parameters and results	Grain type		Units	Assumptions
	Soybean	Canola		
Given: field size	1		acres	
current grain price	8.45	8.8	\$/bu.	
current oil price	31	31	cents/lb.	local prices for crude veg oil
current meal price	13	12	cents/lb.	local prices for purchased meal
production cost	160	220	\$/acre	2008 est per Ag Guide/Penn St
press efficiency	0.83	0.83	factor	amt oil extracted of total oil
percent oil in seed	20	43	percent	avg yields for crop
percent meal in seed	78	55	percent	2% loss in processing
yield of field	41	50	bu./acre	average state-wide yields
production cost - press	0.045	0.04	\$/lb.	grain estimated on-farm pressing cost
Total bushels produced	41	50	bushels	
Possible grain receipts	346.45	440.00	\$	
Cost of production	160.00	220.00	\$	
RECEIPTS FROM GRAIN SALE	186.45	220.00	\$	
ADDITIONAL PROFIT from processing	35.52	53.58	\$	includes 3 cents/lb. marketing
COST SAVINGS FROM ON-FARM USE OF PRODUCTS				
Oil produced	408	892	lbs.	7.5 lbs. per gallon
Oil valued at current oil price	126.59	276.60	\$	
Meal produced	1,919	1,375	lbs.	2,000 lbs. per ton
Meal valued at current meal price	249.44	165.00	\$	
Cost of pressing	110.70	100.00	\$	
Cost of production	160.00	220.00	\$	
NET COST SAVINGS from on-farm proc.	105.34	121.60	\$	compared to purchased oil/meal

Notes: weight per bushel: soybean, 60 lbs; canola, 50 lbs.

Canola price based on 2/25/09 ICE price of \$9.43/bu, adjusted for est. negative basis

Soybean price Keystone Commodities average 2/25/09