Finances for Homestead Scale, Small Farm Grains: A Report for use with the RBEG and the South Willamette Valley Bean & Grain Project

By Harry MacCormack, Sunbow Farm, October 4, 2008

The following figures are typical of crops which yield 40-60 bushels or 2,400 – 3600 lbs, per acre, such as Canadian Triticale, Hard Red Wheat, Perennial Rye and are based on Sunbow grow outs during 2008. We grew 27 test plots of grain this season ,one of which was an older soft white wheat that yielded 150 bushels per acre. This information is approximate, but valuable as per acre costs and potential profits are motivational factors in shaping diversity in a transition to locally grown foods. Labor is figured at the current $10 -$12 per hr. as noted in the Capital Press 9/26/08.

GRAIN ACCOUNTING Per Acre

Seed: 100 lbs per acre, sowing---$ 100.00
$100
Field Preparation: rates per hr. are Sunbow Farm figures

Tractors ----------$ 80.00
Plow----------$ 10.00 one hour
Disk----------$ 35.00 two and a half hours
Fuel----------$24.00
Maintenance---------- $ 6.00
2nd Tractor & spreader-$80.00
Labor @ $10 hr.---------$100.00
Compost----------$250.00
Compost Tea----------$ 50.00

$ 635
(note: our equipment is older, paid-for, and our costs may be lower as a result)

Harvest

Combine @ $20 per hr. -$30.00
Fuel @$10 per hr. --------$15.00
Maintenance @ $5 per hr.-- $ 8.00
Labor @ $10 per hr ------$15.00
$68.00

ALTERNATIVE: Hand Harvest and Thresh
Hammer Mill Thresher -----$2.50 per hr..- 10-15 hrs.
Electricity ---------- $1.00 per hr.-10 -15 hrs.
Labor – Harvesting ---------- $10.00 per hr.- 15 – 20 hrs.
Labor- Threshing ------------$ 10.00 per hr – 15 – 20 hrs.
(note: current costs for farm labor are not a factor if small plot growers are doing the work themselves or trading for grain.)

$310.00

Cleaning And Bagging

Seed Cleaner (Ten Rivers $2100 machine amortized at $420 per year for five years) Rental $2.00 per hr.
Machine can triple clean for market at a rate of 30 lbs. per hr.

1 acre yielding 2,400 lbs. = 80 hrs.
Rent on machine ----------$ 160.00
Labor $10 per hr. ---------- $ 800.00

$ 960.00

ALTERNATIVE: Winnow with a bucket and fan
(note: approximately the same amount of time)

Bagging: We used 1 gallon poly bags which hold 5 lbs.
Bag cost----------$ .14 x 480 $67.20
Labor a 5 minutes per bag ---- $40 hrs x 10 $400.00
Storage : 5 gallon food grade pails- $5 each $500.00
Or 50 gallon drums at $30.00 each $150.00
(each drum holds 500 lbs.)
TOTALS: 2,400 lbs per acre @ $1.00 per pound = $2400.00
@.75 per pound = $1800.00
@. 50 per pound = $1,200.00
@ $10 per bushel = $400.00
Costs of production approximately $735.00 per acre
Costs of harvest approximately with combine $68.00 per acre

Costs of harvest by hand approximately $310 per acre

Costs of cleaning approximately $960 per acre
Costs of bagging approximately $467 per acre

There are other fixed costs, property rental or taxes or mortgage, insurances, office and other building overhead.

CONCLUSION: A small farmer can make a slim profit per acre before cleaning and bagging if grain is sold by the pound. At 50 cents per lb the profit

would be $397 per acre. At $10 per bushel the loss would be $403 dollars per acre.

A secondary conclusion regarding grains: high protein grains as opposed to lower protein white wheat yield less than half the tonnage per acre. This is not reflected in market pricing and is a major reason why soft white wheat is grown in this area.

A third conclusion regarding diversity: oats, barely, hard wheat, triticale, rye, all yield lower than soft white wheat. Again, price does not adequately reflect nutritional differences or the potential for a local cuisine rooted in a diverse range of grains, beans and edible seeds. It is not just a matter of nutritional protein, but minerals, vitamins and amino acids which are structurally different in a range of cultivars. The data on older varieties of wheat from Washington State University backs up the need to consider grains and other foods in terms of nutritional density. Farm and market price should reflect these severe differences.

Finances in Dry Bean Production, Homestead-Small Farm Scale

Sunbow Farm has been growing dry beans experimentally for three seasons. The 2008 season recorded the coldest June since historic weather records have been kept, with a near freeze in the third week of June, consistent cold nights, and many cool, cloudy days with no rain. Our beans were planted on May 7th, came up quickly, had good early leaf growth, then were stunted by the cold.

We planted light green lentils, garbanzos, black, pinto, and red chile beans as main crops. We also planted test plots of adzuki, hokido soy, and edamame soy beans. Except as a novelty, I would not recommend planting these in this climate. They ripen late and unevenly.

All beans were slowed in different degrees by inclement weather This showed in yield differences with previous years. Our yields averaged around 2,000 lbs per acre or 33bushels or about 10% less than previous years.
Lentils are much smaller and lighter than other beans and yielded about 1,200 lbs. per acre, which is about average in northern climates.

Seed at 120 - 160 lbs. per acre ---------- $180 - $200
Field prep (seed grain report above) ------ $638.00
Three applications of liquid fish and kelp -- $50.00 $ 868

Harvest: Our JD 40 Combine crushed bean seeds. To combine beans adjustments need to be made that we didn’t have the skill to do.

All beans were therefore hand harvested which consisted of cutting bean plants, dumping them on tarps, stomping them with feet, sweeping up chaff and beans. This was somewhat faster than the previous year's running them through the hammer mill thresher. Estimated hours of Labor, 160. (In our case, many feet helped. Beans came on for a bike tour and two weekly groups from Santiam School.)This was also the process used at two other homestead sites.
If we had paid for the labor at going costs it would have been:

Labor for cutting and threshing at $10 hr -- $1600.00
Contrast Combine costs at a quarter acre per hour - $80
Labor
- $40 $120
Cleaning using the Ten Rivers Small Seed Cleaner at 80 lbs per hour
50 hours.
Labor----------$250
Rental on Cleaner ---------$100
Total costs approximately $ 2326.00

At $1.00 per pound hand harvested the loss would be $326 per acre
At $2.00 per pound profit would be $ 1674 per acre
Lentils would have to be sold at $3.00 lb to show a profit of $812.00

Combined beans would have total expenses of 1238 and could show a profit of $762 per acre at $1.00 per lb. or $2772 at $2.00 lb. These profits all included on-farm cleaning.

As dry beans would normally be grown on irrigated ground in a small farm situation, competition for that ground can yield as much as 5 – 10 thousand

per acre, depending on crop. Which is why the current “boutique” farmer’s market dry beans are going for $6.00 per lb. in the Corvallis market. If dry beans are used as a legume in more profitable rotations, such as onions, potatoes, tomatoes, etc. the dollar line profit is boosted by soil building for follow crops. Beans ahead of grains will also significantly boost yields even in dry land situations.

Our beans were irrigated twice, but were otherwise dry farmed, utilizing a heavy leaf mulch .In a normal climate year they could be dry farmed with yields somewhat less than what we usually experience.

Conclusion: Dry Beans can be grown in the Willamette Valley. They are however a big gamble, especially when machine harvested. We would highly recommend that they be grown on smaller acreage where hand labor can offset some of the costs and risks. Small combines such as our JD 40 or an All Crop, if properly adjusted, should allow for larger dry bean acreage. Alternatively, without money to invest, substantial pounds of dry beans can be grown using simple tools and hand harvesting. In a post cheap petroleum future this might be a necessity for many people. Markets are apparently there. We had no trouble selling our crop. In fact, we had way more orders than beans.