Determining How Much to Charge for a Value-Added Farm Commodity: Shepherd's Grain Case Study

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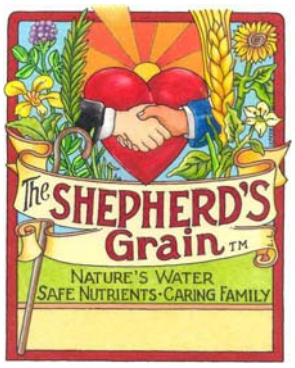
CLIMATE FRIENDLY FARMING™



Shepherd's Grain is grown by a small group of progressive family farmers dedicated to sustainable agriculture. The grains are produced using direct-seed cropping systems and certified by the Food Alliance.

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The Food Alliance

- The Food Alliance is working to ensure "Good Food For a Healthy Future" through third party certification of farmers who:
  - Reduce or eliminate pesticides
  - Conserve soil and water
  - Protect and enhance wildlife habitat
  - Provide safe and fair working conditions.

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Becoming a “price-maker”

- Desire to de-commodify their product
- What to charge?
  - Cost plus a fair return on their investment
    - Production costs
    - Return on machinery and land investments
    - Return on labor and management
    - Some percentage of profit

Crop Price Calculator

- Tool developed by Herb Hinman for Shepherd's Grain
- Determines price to charge for one crop for multiple producers
  - Owner/operator
  - Renter
  - Crop/fallow situation

Allocating Crop Prices Across Varied Farmers & Regions

- Farm land values & productivity will vary
  - Wheat/fallow versus annual cropping
- Investment in machinery, other improvements will vary
- Repair costs, replacement costs will vary
- Land ownership varies

Example 1: 100% Land Owner

- Owner desires 5% return on land investment
- Management fee: 5% of total operating expenses
- Profit: 10% of total operating expense
- Retirement fund: $10,000 per year
- Health insurance premiums: $8,000 per year

Machinery Expenses

- Determine value of current investment
- Determine % of total farm machinery use by this crop -- 40% of the equipment used on this crop
- SG wheat crop is 20% of total farmland
- Annual machinery expense for SG wheat:

  $210,000 * 40% * 20% = $16,800

Machinery Depreciation

- Value of machinery investment attributable to SG is $16,800
- Desired return on investment at 9% is $1512
- Allocated over 200 acres = $7.56/ac/year
- Alternatively, average annual machinery replacement cost could be used as a proxy for annual depreciation allocated to these acres

Machinery Expenses

- Machinery repair, replacement, insurance, taxes, housing
- Total expenses are allocated to the crop based on:
  - % of machinery used for this crop, e.g. 40%
  - % of farm acreage used for this crop, e.g. 20%
  - $43,750 * 40% * 20% = $3500
  - Allocated over 200 acres = $17.50 per acre

Farm Buildings, Tools, Improvements

- Allocate fixed costs over all acreage
- Example: Value of shop: $50,000
  - Desired return on investment (opportunity cost) of 10%
  - $5,000 per year over entire farm
  - Allocate to SG acreage:
    $5,000 * 20% = $1000/year
    - *See CPC W03 Excel file*

Wheat/Fallow example

- Fallow expenses must be added
- Interest on preceding fallow year is added to wheat production costs
- Wheat/fallow region
  - Lower rainfall
  - Lower yielding, e.g. 52 bu rather than 72 bu per acre
    - See CPC WSF

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Calculating Crop Prices Under Leasing Arrangements

- Landlord gets 1/3 of crop
- Landlord pays 1/3 of crop expenses
  - Fertilizer
  - Crop insurance
- Net landlord share out of operator's share
  - See CPC WSL

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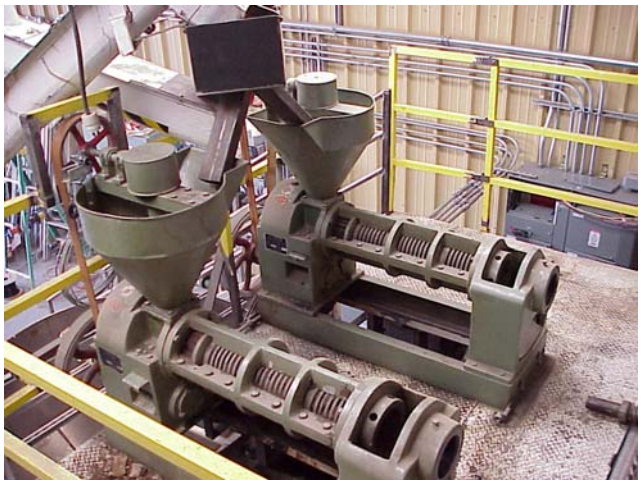
Oregon Grown Biodiesel Case Study: Engaging Consumers, Helping Farmers



Branding to the end consumer

- Returning a $.14 floor price to the grower
- Providing a reasonable margin to all parties involved in the production and distribution
- All economics involved are Oregon based

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Biosolids to Biodiesel

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Branding to a Specific Consumer

- Providing a stable priced, carbon neutral fuel.
- Growing canola on fields fertilized by biosolids
- Crushing that canola into oil and producing biodiesel to fuel the trucks that deliver the biosolids to the farm.
- Supplying raw oil to SeQuential to produce biodiesel for the city fleets.

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Selling to OR DOT: Getting Around Interstate Commerce Restrictions

- Contract has preference for proximity of:
  - Feedstock (canola) production to crushing facility
  - Crushing facility to biodiesel production facility
  - Biodiesel production facility to end-users
- OR farmer with crushing facility on his farm can gain an advantage

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Type of oil to use	volume of oil per batch	Units of batch	Amount of oil in Liters	cost of oil per batch	Amount of Lye purchased	units of Lye cost	cost of Lye	Amount of Lye in Grams	Cost of Lye per Gram	Grams of Lye to use per liter of Oil	cost of lye per gallon	Cost of Methanol per gallon	Percent of Methanol to use by volume	Cost of Methanol per gallon in batch	end cost per gallon	end cost net with P & I
crush	1	gallons	3.785	$1.59	800	OZ	$107.00	22680	0.005	3.5	0.062	$2.20	20.00%	$0.4400	$2.09	$2.52

Methanol cost per 55 gallon drum	121
Percent of bio diesel per gallon of oil	104.00%
Weight of oil per gallon	7.2
Canola value per pound wanted on farm	0.12
Canols value per ton on farm	240
Canola meal value per ton	145
Percent oil in canola	32.0%
Amount of pounds of oil per ton	640
Amount of gallons of oil per ton	88.89
Amount of pounds of meal per ton of canola	1360
Value of meal per ton of crush	98.6
Value of meal per pound of canola	0.0493
Cost of oil per gallon	1.59075
Capital debt	-$225,000
Interest rate	8.00%
Number of payments to payoff (5yr)	60
Principal and interest on note per month	$4,562.19
Gallons of fuel used per year	107000
Payment per gallon of fuel used per year	$0.512

Input number are green
Output results are yellow

If paid	2.3	per gallon for raw oil in Salem then the on farm price is	$0.1515
Net price on the farm per pound for the oil with delivery cost to Salem			$0.1475
Freight per ton to salem			$25.00
Gallons that the truck will hold			10000
Cost of freight per trip			$900.00
Tons of uncrushed canola per truck load of oil			112.5
Expected yield per acre in pounds			3000
Return per acre at	0.12	cents /#	$360.00
Return per acre with biodiesel on the farm			$442.57

Biodiesel plant gross profit at 12 cents purchase price	$220,178

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