

Obstacles Implementing Oil-Seeds in Biofuel Production in the PNW
By: Richard Manuli



Obstacles Implementing Oil-Seeds in Biofuel Production in the PNW

By: Richard Manuli



Research Question

- Identify obstacles in the biofuels market regarding the addition of oil-seeds to wheat rotations in the PNW.

Where can we apply this?

- Farmers interested in implementing oilseeds
- Potential biofuel producers and blenders

What is being accomplished?

- Furthering research on wheat yield implications when adding oilseeds into winter wheat rotations
- Better understanding of the economics of biofuel markets
- Helpful information for entrepreneurs interested in building biofuel plant



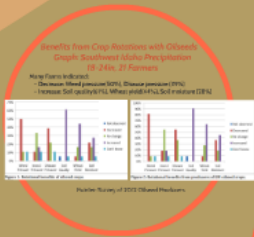
Incentives and Obstacles of Oilseed Bio-Market

Broader Objective: Reduce CO2 emissions, Reduce reliance on foreign oil, Stabilize the economy

Farmers

+Sustainable Agriculture, Additional Revenues, Increased Yields, Co-Products

-Need more research on crop varieties suitable for the PNW and interactions with other crops, Markets aren't well established, Dirty Crops



Incentives and Obstacles of Oilseed Bio-Market

Producers/ Blenders

- Tax Subsidies, RINs, Increase market share
- Certainty in supply of oilseeds, Market demand

Consumers

- Air carbon emission, 10,000 extra hours of engine life
- Hard to access, Cars prior to 2001 can't use ethanol blends

Incentives and Obstacles of Oilseed Bio-Market

Producers/ Blenders

- +Tax Subsidies, RINs, Increase market share
- Certainty in supply of oilseeds, Market demand

Consumers

- +No carbon emission, 10,000 extra hours of engine life
- Hard to access, Cars prior to 2001 can't use ethanol blends

Benefits from Crop Rotations with Oilseeds

Graph: Southwest Idaho Precipitation 18-24in, 21 Farmers

Many Farms Indicated:

- Decrease: Weed pressure(50%), Disease pressure (39%)
- Increase: Soil quality(61%), Wheat yield(44%), Soil moisture (28%)

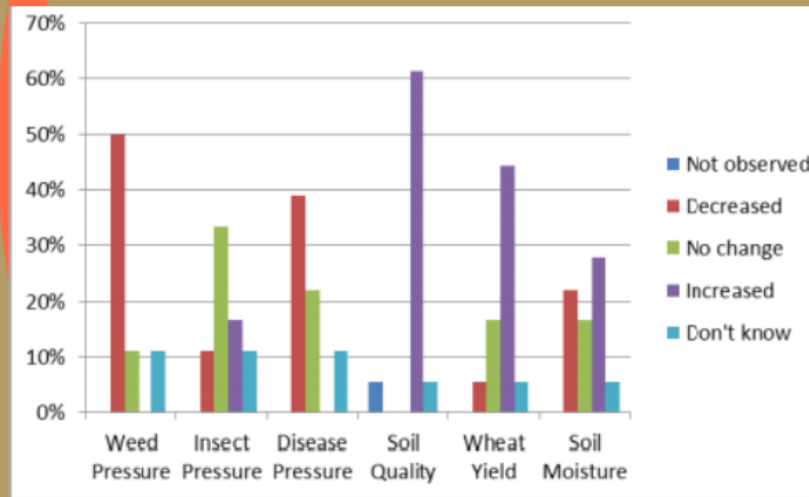


Figure 1: Rotational benefits of oilseed crops.

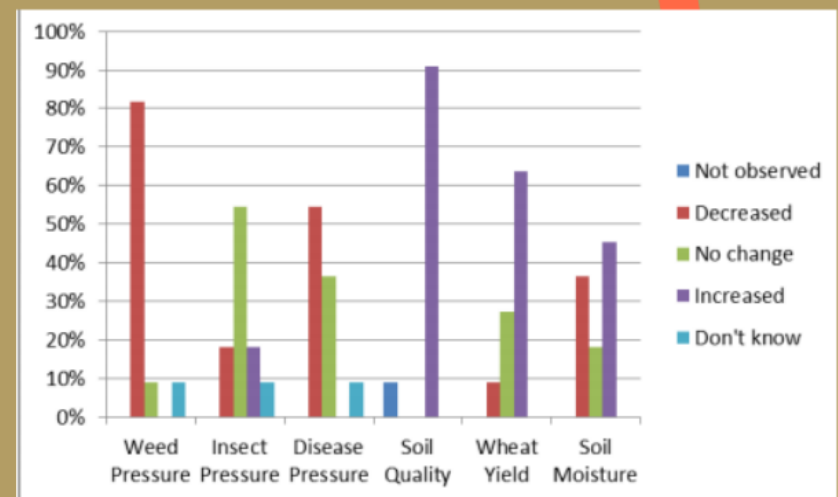


Figure 2: Rotational benefits from producers of GM oilseed crops.

Painter: Survey of 2012 Oilseed Producers

Laws and Policies

Federal tax incentives

- Blender Tax Credit
- Alternate Fuel Refueling Infrastructure Tax Credit
- Renewable Energy Grants and Guaranteed Loans
- Renewable Fuel Standards

Oregon tax incentives

- Business Energy Tax Credit
- Producer Tax Credit
- Rural Renewable Energy Development Zones
- Biofuel Consumer Income Tax Credit
- Portland Biofuels incentive

AgProfit

Farm scenario based out of Pendleton Oregon,
Precipitation Zone 18-24in, Conventional Till

Classic Wheat Rotation

Rotation: Winter Wheat / Peas

Yields: WW 110 Bushels, P 2,000 IBS

NPV: \$2661

Wheat Rotation with Camelina

Rotation: WW/P/WCamelina

Yields: CM 1,600 IBS

Unit \$.15

NPV: \$2,128

NPV + Credit: \$2,582

NPV+ Credit+ Plant: \$2,736

Wheat Rotation with Canola

Rotation: WW/P/ SCanola

Yields: CN 2,500 IBS

Unit: \$.20

NPV: \$2,404

NPV + Credit: \$3,032

NPV + Credit+Plant: \$3,272

Canola:

- Profitable \$371 with current yields and legislation.
- Change .5 to .15 credit Profitable by \$868

Camelina

- Not profitable with current yields and legislation (\$-79), Change (\$75)
- years of drought could be more profitable due to irrigation needed
- lower yields but higher oil content



Take Aways

- Biofuels market isn't profitable to grow (YET), under current market conditions.
- May become more profitable in the future if yields can be increased, prices for seed oils increase, or biofuel policies change
- Oilseeds rotation is beneficial for yields and profit
- The exploration of knowledge is endless...



References and Questions

Miller, P. and J. Miller. 2011. "The Impact of Biofuel Production on the U.S. Soybean Market." *Journal of Agricultural and Applied Economics* 53(1): 1-15.

Miller, P. and J. Miller. 2012. "The Impact of Biofuel Production on the U.S. Soybean Market." *Journal of Agricultural and Applied Economics* 54(1): 1-15.

Miller, P. and J. Miller. 2013. "The Impact of Biofuel Production on the U.S. Soybean Market." *Journal of Agricultural and Applied Economics* 55(1): 1-15.

Miller, P. and J. Miller. 2014. "The Impact of Biofuel Production on the U.S. Soybean Market." *Journal of Agricultural and Applied Economics* 57(1): 1-15.

Miller, P. and J. Miller. 2015. "The Impact of Biofuel Production on the U.S. Soybean Market." *Journal of Agricultural and Applied Economics* 59(1): 1-15.

Thank you!

References and Questions

Diebel, Penelope L., and Lukas Stein. "Economic Analysis of Potential Camelina Oil Crop Supplies in the Northwest U.S." [Http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/33836/SteinLukas2012.pdf?sequence=2](http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/33836/SteinLukas2012.pdf?sequence=2). Oregon State University: Applied Economics Department, 14 Sept. 2012. Web. 18 July 2014.

Hulbert, Scott. Camelina Production in the Dryland Pacific Northwest. Washington State University Extension Fact Sheet. Washington State University Extension, June 2012. Web. 12 July 2014.

Painter, Kate, and Hilary Donlon. Results of a 2012 Survey of Idaho Oilseed Producers. Agricultural Economics Extension. Department of Agricultural Economics and Rural Sociology, 13 Mar. 2013. Web. 12 July 2014.

Parker, Craig F. "Willamette Biomass Processors, Inc." Personal interview. 15 July 2014.

Reimer, Jeffery. "Canola & Camelina Characteristics." Personal interview. 7 July 2014.

Seavert, Clark F. "AgTools." Personal interview. 4 Aug. 2014.

Sowers, Karen, Dennis Roe, and Pan Bill. "Oilseed Production Case Studies: Eastern Washington Low-to-Intermediate Rainfall Zone." Oilseed Production Case Studies: Eastern Washington Low-to-Intermediate Rainfall Zone (2012): 1-28. Print.

Thank you!