Obstacles Implementing Oil-Seeds in Biofuel Production in the PNW

By: Richard Manuli
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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
+ 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
18-24 in, 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
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


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Thank you!