

SUSTAINABLE BIODIESEL

FOR MONTANA AGRICULTURE

Camelina oilseed for biodiesel thrives in Montana's cool, arid climate. The plant is drought-tolerant and needs little fertilizer, grows 1-3 feet tall, and produces oil-rich seeds. Current crop yields range from 500-2,000 lbs./acre



Northern Plains Resource Council's *Renewing Montana* campaign to legalize and promote micro-processing of biodiesel to enhance our rural economy and ensure energy independence for Montana agriculture

Biodiesel is a clean, renewable fuel that can be produced sustainably using Montana-grown oilseed crops, recycled cooking oils, or rendered animal fats. Oilseed crops such as camelina, canola, or safflower can be raised in rotation with Montana small grains (wheat or barley) resulting in less need for herbicides and fertilizer. A byproduct of biodiesel micro-processing is a high-protein supplemental livestock feed. Biodiesel production links Montana's farmers and ranchers with clean, homegrown fuel and feed and adds value to the state's number one industry — agriculture.

2009 Legislation to Promote Montana Ag Independence

Problems and Solutions ...

This legislation would enable Montana farmers and ranchers to produce their own biodiesel fuel and high-protein livestock feed supplement without a lot of red tape and expense.

Biodiesel laws and rules are geared toward industrial-scale refineries (up to 100 million gallons/year). A micro-processor uses Montana-grown oilseed to produce biodiesel for self use and makes less than 50,000 gallons a year. **Small micro-processors are currently prohibited from working with a few neighbors in partnerships or small co-ops to make the fuel and use the feed byproducts for self use.**

In order to make biodiesel in Montana and pay taxes or receive tax incentives, the producer, even for self use, must conduct an expensive American Society for Testing and Materials (ASTM) fuel test (costing up to \$1,000). This rigorous test makes sense for a community- or industrial-scale plants that sell the fuel to the public. **A less expensive test makes sense for the micro-processor who is making it only for self use. Micro-processors should be allowed to register and comply with tax laws or apply for renewable fuel incentives** without the expensive ASTM testing on every batch and be able to use their own biodiesel on Montana highways.

Allow Montana schools to participate in small cooperatives making biodiesel to help educate students on an important new technology and provide clean, renewable, and low cost fuel for school buses and equipment.

Biodiesel produces 70 percent less carbon dioxide, a major greenhouse gas, than conventional petroleum diesel. It also significantly cuts pollution from sulfates, hydrocarbons, carbon monoxide, and particulates.

This Legislation Would:

- Promote the on-farm production of biodiesel for use in Montana agriculture and rural schools;
- Use biodiesel byproducts to enhance Montana's livestock industry;
- Reinvigorate the Montana economy by adding value to Montana raw products;
- Reduce the need for imported oil and increase the energy security and independence of Montana's agricultural sector;
- Regulate and monitor micro-processing scale of production of biodiesel sufficient for on-farm use.

GIVE AG PRODUCERS THE OPPORTUNITY TO MEET THEIR FUEL AND FEED NEEDS

Expected Biodiesel & Cattle Feed Yields

Feed 300 cows: December through February

| Crop | Acres | Yield (lbs/acre) | Biodiesel (gal/acre) | Biodiesel (gallons) |
|-----------|-------|------------------|----------------------|---------------------|
| Camelina | 56 | 1,200 | 66.4 | 3,718 |
| Canola | 66.5 | 1,363 | 75.6 | 5,027 |
| Sunflower | 69 | 1,240 | 71.2 | 4,913 |
| Soy | 34 | 1,860 | 48.9 | 1,663 |

Biodiesel: A Sustainable Alternative

Biodiesel can be used in virtually any diesel engine without modification. It can be used in its pure form (called B100) or as a blend with petro-diesel at any ratio. The most common blend is 20% biodiesel, 80% petro-diesel (B20). Biodiesel provides similar horsepower and fuel economy as petro-diesel with superior lubricity to reduce wear and tear on the engine.

A major byproduct of biodiesel production is a high-protein feed supplement for livestock. It is estimated that 27 tons of this byproduct could feed 300 cows from December through February. A rancher and farmer could team up to produce biodiesel fuel to run farm equipment and meal to feed cattle.

Micro-processor, mobile- and farm-scale biodiesel technology helps integrate more sustainable livestock production, lengthening the stay or even finishing cattle in the region on a primarily grass-fed diet, and lessening the reliance and use of large CAFOs (confined animal feeding operations). Alternating small-grain crops with oilseeds provides on-farm conservation benefits, reduces the need for expensive fossil fuel products, and enhances productivity and profitability.

There are several legal tiers of biodiesel production. This legislation would make it easier for micro-processor and farm-scale production.

Micro-Processing Production

■ Several farms/ranches or local investors would collaborate to produce up to 50,000 gallons/year. Montana law would need to be changed to allow this small of a scale.

■ Batch processing in relatively small quantities (80-500 gallons) uses an expeller oilseed press, which makes a chemical-free, oil-rich animal feed. This scale is too small to absorb the expense of American Society for Testing and Materials (ASTM) certification on every batch.

■ Micro-processing of biodiesel would only be for self use and not for sale to others, or the general public.

■ Users would need to legally file and pay taxes (off-road users can apply for a refund of most of the state tax).

■ Affordable equipment is available on the market today.

■ Micro-processors are in legal limbo regarding certification of the fuel, the process for filing taxes, and Clean Air Act compliance.

Farm Scale and Mobile Production

■ Sole proprietor is making biodiesel for off-road, on-farm use. Also, a small, mobile operation could contract with a farmer or individual to make biodiesel for self use.

Community Scale Production

■ Small local plants would produce 250,000-5 million gallons/year.

■ These often use an industrial solvent to extract the oil from the seeds and run continuously so it is simpler to obtain ASTM certification for processing, equipment and product.

■ Compliance with IRS, Montana Department of Transportation, EPA and other permitting agencies can be reasonably absorbed at this scale.

■ The product can be sold to the public.

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Northern Plains Resource Council is a grassroots conservation and family agriculture group that organizes Montana citizens to protect our water quality, family farms and ranches, and our unique quality of life.

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