

New Feedstocks for Biodiesel



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Sustainable Biodiesel Feedstocks

**“Highly Dependent Upon The
Development of Low Input,
Economically Profitable, &
Sustainable Production Systems”**

**Minimal Production Inputs
Optimum Oil Production**

Sustainable Biodiesel Feedstocks

Three Potential Crops:

1) Fall Planted Safflower

2) Spring Planted Castor

3) Winter Canola & HEAR

Safflower

(Carthamus tinctorius L.)

- Origin: Mediterranean & Central Asia
- Seed Yield: 500-3000 lbs/acre
- Oil Content: 38 - 42 % (30 – 160 Gal./Ac.)
- Fatty Acid: High Oleic (C18:1)
- Disadvantages: Seed Diseases
- Advantages: Very Drought Tolerant & Well Adapted to Western U.S.



Future Winter Safflower Research



**Higher Oil
Content**

**High Oleic
Acid**

Castor - (Ricinus communis L.)

- Origin: Africa
- Seed Yield: 900 to 3000 lbs/acre
- Oil Content: 45 to 50% oil (55 – 200+ Gal/AC.)
- Fatty Acids: 85% ricinoleic acid
- Disadvantages: Ricin Toxins & Irrigation
- Advantages: Very High Oil Yield,
Excellent fuel quality.



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Future Castor Research

Improved
Water Use

Reduced
Ricin Toxins

Genetic Yield
Enhancement



Canola & HEAR

(Brassica napus L.)

- Origin: Asia & Europe
- Seed Yield: 800-2800 lbs/acre
- Oil Yield: 38 - 46% (45 – 155 Gal./Ac.)
- Fatty Acids: 58 - 85% oleic
- Disadvantage: Insect Pests & Shattering.
- Advantage: Winter Crop & High Oil Yields.



Future Canola & Hear Research

**Need to Develop Canola Varieties
With Better Fall Emergence and
Reduced Shattering**



Future of U.S. Biodiesel Industry Is Dependent Upon New Feedstocks

