

# Accomplishments to date:

- Green Oil is established as *the* leader in design, R&D, implementation, and production of bio- products

*Operating as a pilot operation, Green Oil proved that environmentally safe, vegetable oil based lubricants is a viable alternative/replacement to petroleum based products.*

- As a result, Green Oil Company received Oil Daily's "Lubricants World Magazine's" coveted award for "Making the Market in Bio-Hydraulic Fluids"
- Green Oil Company has received a grant from the U.S. Department of Energy. This \$1.34 million study, scheduled for completion in 2008, involves both marketing and research & development that can impact the ability of Green Oil to prosper
- Green Oil Company expects to construct 6 new plants in the next 5 years. This will make the product readily available everywhere, to sell at prices that are competitive with petroleum lubes.

- **Founded in 1991**
- **Currently, Green Oil Company toll blend canola-based lubricants in limited quantity in Cleveland, Ohio**
- ***The Company received Oil Daily's "Lubricants World" Magazine award for "Making the market in bio-hydraulic fluids"***
- **Its impressive list of customers of Green Oil's bio-hydraulic and bio-chain saw oils include:**



# THE U.S. LUBRICANTS MARKET: 2.4 Billion Gallon/Yr. \*\*

Market	Size (in 2001)
Lubricants & Oils:	
Automotive	1.25 billion gals
Industrial (Hydraulics, Elevator Oils, etc.)	1.15 billion gals
Marine/Aviation	n/a
Greases	47 million gals
Motor Fuels	8.8 million barrels

- One of Green Oil's proposed facilities will be capable of producing 100MM gallons of product annually
- Initial efforts are directed at industrial lubricants market, where profit margins are largest.
- Multi \$ billion market\*\*

# Benefits of Canola based Bio-Lubes:

- ✓ Economic
    - One utility reported that a 20-gallon petroleum-based spill cost it \$27,000 to clean up. Green Oil is petroleum free!
  - ✓ Performance
    - Superior Lubricity; Machines run cooler
    - Canola Oil is more slippery than Petroleum
    - It clings better to metal parts
  - ✓ Environmentally
    - Toxicologically safe
    - Rapidly Biodegradable
  - ✓ Political
    - A domestic Farm Product, relieving our nation's dependence on Insecure Foreign Oil
- Green Oil's refineries will deliver these advantages at prices that are competitive to comparable petroleum-based products!**

# Green Oil is Setting Higher Standards

- Significantly exceeds current federal mandated “bio-based” standards
  - In 21 days, spilled bio-products are about 97% gone
  - They are rendered inert by natural action of micro-organisms
- Are made to customer’s specifications
- Green Oil reduces U.S. imports
- They are made from U.S. farm products

- Federal government
  - Executive Order 13134
    - Calls for tripling of federal government's use of renewable, biobased products by 2010
  - 2002 Farm Bill
    - Section 9002 **mandates federal agencies to purchase designated biobased product items**
- Private sector
  - Economic benefits
  - Performance benefits

# Advantages: Chain Saw Oil Example

- Less costly to use
  - Adheres better to steel, resulting in a 50% savings in oil use
- Extends life of bar and chain by 100%
- Less exposure to possible employee litigation, compared to carcinogenic petroleum.



Chain saw are “*open, total loss*” lube applications that from normal use directly emit lubricants into the surroundings. They accumulate at low locations, e.g., in rivers and streams, and affect living things adversely.