

*continue technology transfer efforts pertaining to Amaizing Oil. Because of its health benefits and the fact that its source is a very abundant material, Amaizing Oil is a good candidate for export. The competitiveness of Amaizing Oil on the world market will be evaluated.*

→ **ACCOMPLISHMENTS:** A patent for Amaizing Oil (corn fiber oil), US 5,843,499 was issued on December 1, 1998. Although one company licensed the patent for two years, it is now available for licensing. Currently, several major companies are competing for this license. Our patent application for Corn Fiber Gum is co-owned by our CRADA partner (the CRADA began in June 1997 and will continue through May 2000), and the scale-up and cost analysis for corn fiber gum is being completed at the company.

**IMPACT/OUTCOME:** If functionality testing and cost analyses are successful and internal approvals are obtained within the partner company, production of Zeagen could begin in 2000.

*develop cost-effective methods for extracting Amaizing Oil from corn milling byproducts such as corn fiber (from either wet milling or modified dry grind ethanol processes).*

→ **ACCOMPLISHMENTS:** ARS researchers developed a process (and applied for a patent) to obtain "quick fiber oil" and optimized process parameters to produce this cholesterol-lowering oil that contains high levels of phytosterols.

**IMPACT/OUTCOME:** This healthy high-value product could increase demand and value of corn and corn byproducts, especially corn fiber, a low value byproduct of fuel ethanol production.

*improve the already commercialized Lambent hydraulic fluid made from vegetable oils to meet the "Blue Angel" environmental and performance standard by improving process catalysts.*

**ACCOMPLISHMENTS:** An alternative catalyst used at very low levels was developed that brought the final product up to industrial standards. In addition, the improved product is very similar in color to off the shelf high quality motor oils.

**IMPACT/OUTCOME:** The properties and price of this new base oil/hydraulic fluid will open huge new markets for high content oleic crops. Replacement of petroleum-based lubricant products with biodegradable alternatives will be possible in large part due to this new high performance product.

*develop a cooperative five-year plan with growers, processors, and end-users for the commercialization of lesquerella as an alternative crop for Arizona, Texas, and New Mexico.*

**ACCOMPLISHMENTS:** Lesquerella grown in Arizona, New Mexico, and Texas in 1999 will increase in acreage over the next five years but at a slower pace than originally planned. Approximately 4,000 pounds of seed was cleaned and the oil extracted for further experimentation and seed cleaning process development. Data from analyses were provided to assist in development of new lesquerella varieties.

**IMPACT/OUTCOME:** Markets for lesquerolic acid and other products will be developed so that lesquerella will ultimately become an alternative cash crop for farmers.

**GOAL 2:** To Ensure an Adequate Food Supply and Improved Detection, Surveillance, Prevention, and Educational Programs for the American Public's Health, Safety and Well-being.

**Analysis of Results:** This goal is the focus of much of ARS' research related to food safety and the security of the US agricultural production system. Under Goal II, 52 Indicators are aligned under 9 Performance Goals. Because of the unique and dynamic nature of research, several Indicators were added to the Report that did not first appear in the Annual Performance Plan for FY 1999. This was done