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U.S. Department of  
Transportation



Project Title: ***Biodiesel Feedstock Development  
for the Southern Great Plains***

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**Rationale:**

Winter canola is a desirable broadleaf crop that can be planted in rotation with winter wheat to improve the overall sustainability of production agriculture in the Southern Great Plains. Winter canola is adaptable to the region and has a life cycle similar to winter wheat. Specialty cultivars, with profiles having high oleic acid and low linoleic acid, produce more stable oils than conventional cultivars. Thus, wheat growers will garner the benefits of a crop rotation by including specialty winter canola cultivars in continuous wheat production systems. Rural communities will see an economic revitalization as new industry is established in the region to satisfy the demand for processing canola grain and creating biodiesel. Planted winter canola acres will likely increase as the processing infrastructure is developed. Following oil extraction from the grain, livestock producers will benefit from feeding a high protein meal. Industries will increase dependence upon diesel fuel blends with improved lubricity made from a biodegradable, renewable, and non-toxic feedstock. Consumers will rely upon a biodiesel fuel source with cleaner emissions rather than an unstable foreign petroleum supply.

**Project Outcomes:**

The program has developed over 400 breeding populations with the potential for improved, highly-stable oil. F1 progeny ranged from 28.5 to 76.9% oleic acid, 10.1 to 25.2% linoleic acid, 3.4 to 9.4% linolenic acid, 0 to 30.6% erucic acid, and 3.5 to 7.5% saturated fats. As these populations are advanced through breeding and selection, more research will be performed to further biodiesel feedstock development in the Southern Great Plains.



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