

Eastern Washington Farmers Diesel Emission Reduction Program

Sponsored by:

EPA

Upper Columbia RC&D,

Blue Mountain RC&D,

Spokane County Conservation
District

Project Summary

- Encouraged 21 Eastern Washington farmers to convert 16,900 acres to no-till direct seeding
- Offered cash incentives to farmers who made the switch
- Dramatically reduced diesel emissions
- Reduced atmospheric pollutants and volatile organic matter
- Reduced labor, tractor runtime and equipment wear
- Reduced soil erosion and soil compaction while increasing soil moisture and organic matter

No-Till Direct Seed



Funding Source

- Funded through a grant from the Environmental Protection Agency
- Awarded under Region 9 and 10's West Coast Collaborative Diesel Emission Reductions Request for Proposal (RFP)

Budget

Estimated Budget Overview

Cost Share	\$ 66,064.00
Contractual (with EnSave Inc.)	\$ 27,961.00
Administration	\$ 5,000.00
Travel	\$ 975.00
Total	\$ 100,000.00

Final Budget Overview

Cost Share	\$ 67,644.40
Contractual	\$ 27,855.75
Administration	\$ 3,361.86
Travel	\$ 77.60
Advertising	\$ 635.28
Total	\$ 99,574.89

Program Partners

- Upper Columbia & Blue Mountain RC&D Councils
- EnSave Inc. - leaders in energy efficiency, pollution prevention and conservation solutions.
- Spokane County Conservation District
- Palouse, Palouse-Rock Lake, Pine Creek, Whitman, Asotin County, Columbia, Pomeroy and the Walla Walla County Conservation Districts
- EPA & Washington Department of Ecology

Enrollment

- Conservations Districts promoted and directed growers to the RC&Ds to apply
- UC RC&D & Blue Mountain RC&D processed the applications and determined eligibility
- Farmers were notified within 5 business days whether they were selected into the program
- Following selection, the farmer and UC RC&D developed a cost–share contract finalizing their commitment to enroll in the program

Direct Seed Is A Serious Investment



Documentation and Spot Checks

- Farmers were required to provide the following information in order to verify their operation :
- Equipment used with measurements
- Mph and gal/hour for each type of operation
- Gallons of fuel used per acre
- Total acres completed of the contracted area
- Photos

Payments and Reports

- Upon receipt of the post-planting documentation UC RC&D reimbursed the farmer \$4.00 per acre
- UC RC&D submitted monthly reports and invoices to EPA

Success Depended On Others

- Conservation Districts and RC&Ds were the mechanism to make it happen
- Other programs provided additional incentives to overcome the steep investment
 - Spokane CD State Revolving Fund Loan Program
 - USDA-NRCS Farm Bill EQIP Program
- Higher Cost of Inputs (diesel, fertilizer)

Compatible Programs

- The Spokane County Conservation District offers low interest loans made available by DOE and EPA through a State Revolving Fund program to promote no-till direct seeding. This helps offset the initial high investment for purchasing direct seed equipment, which has a direct correlation with diesel emission reduction
- <http://sccd.org> for more information.

Program Results

Pollutant	Area	No-Till Usage Savings	Gallons Saved	Emissions Factor	Emissions	Emissions
	(acres)	(gal/acre)	(gal)	(lb/gal)	(lb/yr)	(tons/yr)
PM	16911	1.54	26045	0.0298	776	0.39
SOx	16911	1.54	26045	0.0156	406	0.20
NOx	16911	1.54	26045	0.284	7397	3.70
VOM	16911	1.54	26045	0.029	755	0.38
CO	16911	1.54	26045	0.156	4063	2.03
CO2	16911	1.54	26045	22.42	583929	291.96

Non-Emission Benefits

- Due to fewer passes on the field, machinery wear and tear is reduced
- Soil erosion from water was reduced on average 5 tons per acre or 84,555 tons
- Wind erosion was reduced 1 ton per acre on average or 16,911 tons
- There was no model available to quantify PM-2.5 and PM-10 reductions

Farmer's Experience

UC RC&D created a survey and the responses were positive. Many of the participants were interested in future programs if available.

- All farmers saw diesel savings averaging 1.54 gallons/acre with ranges from 0.36 gallons/acre to 2.98 gallons/acre.
- Time savings averaged over 60%.

A Greater Amount of Protection From Fewer Inputs



Program Expansion Opportunities

- The Upper Columbia RC&D applied for a 2008 EPA West Coast Collaborative Diesel Emission Reduction Program grant.
- This grant covers Eastern Washington and parts of Oregon to encourage an additional 130 farmers to convert 91,000 acres to no-till direct seed and implement new technologies that improve efficiency like GPS auto-steer, bio-diesel and fuel metering devices.

Expected results

- Diesel use would be reduced by over 130,000 gallons
- Bio-Diesel would replace an additional 20,000 gallons
- Emission reductions expected are greater than 50%
- Soil erosion reduced by about 455,000 tons
- PM-2.5 and PM-10 reduced