

**Air Enhancement Activity – AIR10 – Discontinue burning crop residue**



**Enhancement Description**

Utilize non-burning crop residue management techniques after a crop harvest.

**Land Use Applicability**

Cropland

**Benefits**

Burning crop residue after harvest produces smoke, as well as other air emissions, including volatile organic compounds (VOCs) and oxides of nitrogen (NOx) that are precursors needed for ozone formation, and various forms of particulate matter. By replacing burning with other residue management alternatives (leaving residue in place, mowing, light disking, or sweeping), harmful air emissions will be greatly reduced. The proximity of cropland to sensitive receptors is becoming more common as urban encroachment continues across the nation. Other benefits include improved soil quality, reduced erosion, and improved water quality.

**Conditions Where Enhancement Applies**

This enhancement only applies to crop land use acres where annual or perennial cropping systems produce significant residues that are currently being burned or have been burned in prior years.

**Criteria**

Implement a residue management technique, excluding burning, that meets each of the following:

1. Replace residue burning with one of the following alternatives - leave residue in place, mow, light disk, or sweep.
2. Residue management techniques cannot result in increased soil erosion as calculated by the appropriate soil erosion prediction model (RUSLE2 and/or WEPS)
3. Predicted soil erosion must not exceed the soil loss tolerance (T value) as calculated by the appropriate soil erosion prediction model (RUSLE2 and/or WEPS)
4. Crop residue will remain in fields and be allowed to naturally decompose.

**Adoption Requirements**

This enhancement is considered adopted when each of the above criteria has been implemented on the land use acre.

**Documentation Requirements**

1. RUSLE2 and/or WEPS reports showing the management systems, including individual operations, of both the current system utilizing burning and the non-burning alternative system.



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2. A map showing fields, acreage, date and type of non-burning alternative activity applied.

### **References**

Eastern Research Group, Inc. (ERG) and Enviro-Tech Communications. 2002. Non-Burning Alternatives on Agricultural Lands (Task 4.3.1.1). Western Regional Air Partnership, Fire Emissions Joint Forum ERG No.: 3261.00.005.001. <http://www.wrapair.org/forums/fejf/tasks/FEJFtask4.html>.

Hansen, D.G. and J.E. Carlson. 2004. Washington State Alternatives to Burning: Agricultural Practices to Help Eliminate or Reduce the Need to Burn. Washington State Department of Ecology, Air Quality Program. [http://www.ecy.wa.gov/programs/air/aginfo/research\\_pdf\\_files/AlternativesAgBurn.pdf](http://www.ecy.wa.gov/programs/air/aginfo/research_pdf_files/AlternativesAgBurn.pdf).

Jones and Stokes. 2004. Non-burning Alternatives for Wildlands (Task 4.3.1.1). Western Regional Air Partnership, Fire Emissions Joint Forum. Sacramento, CA. <http://www.wrapair.org/forums/fejf/tasks/FEJFtask3.html>.