Sustainable Alternatives to Biomass Incineration in the San Joaquin Valley

Open burning and industrial biomass incineration in the San Joaquin Valley produces large amounts of fine particle pollution (PM2.5) in what is already the most polluted air basin in the nation for PM2.5. The following are sustainable alternatives to managing woody waste.

Mulching

On Farm Benefits:

- Increased soil water retention;
- Erosion and weed control;
- Prevents soil compaction; and
- Eliminates need for incineration.

Off-Farm Benefits:

- Inexpensive erosion and dust control and improved water retention on public lands, street medians, landfills, airport infields, etc.
- Mulch can be sold for profit.

Barriers:

- Chipping costs (an additional $250 an acre), or initial cost of purchasing a chipper.
- Trucking costs and emissions if using mulch off-farm.
- Costs could be offset by reduced need to purchase mulch, or from sale of mulch.

Composting (long-term solution)

Benefits:

- On-site or clustered composting around dairies and farms can create valuable soil amendments out of manure and surplus woody materials;
- Eliminates need for incineration;
- Reduces risk of water contamination; and
- More jobs, healthier soils, more resilient Central Valley.

Barriers:

- Chipping and trucking costs;
- Current off-farm facilities cannot handle load (need more composting facilities);
- Regulatory hurdles with on-farm composting.

Chipping and Reincorporation

Benefits:

- Soils amended with woody debris sequester carbon at a higher rate, have higher levels of soil organic matter, increased soil fertility, and increased water retention (UC Davis, 2014).
- Increased productivity leads to increased yield and profits over time.
- Eliminates incineration and associated public health harms.
- Long-lasting positive impacts for air quality and community health.
- Co-benefits of protecting aquifers from contamination from synthetic fertilizers.

After switching to whole orchard reincorporation, family owned and operated Johnson Farms produced 1,500 more pounds of almonds per acre (Johnson, 2017).

Barriers:

- Equipment costs (Grinder & Excavator)
- Though the cost initially appears prohibitive, the ultimate value of returning organic matter to soils is realized in increased soil fertility and productivity in next orchard.

Prescribed Burns (Forest)

- Prescribed fire is the most practical way to reduce dangerous accumulations of combustible fuels.
- CVAQ supports the use of prescribed fire to reduce fuel load in forests as long as safe smoke management practices are utilized and impacts to public health are minimized.

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Existing Funding Available for Farmers

Federal Conservation Stewardship Program (CPS) CPS encourages land stewards to improve their conservation performance by adopting sustainable activities and improving, maintaining, and managing existing activities on agricultural land. This program covers activities such as Vine or Tree removal ($33.09/acre), Chipping and Hauling off-site ($31.70/acre), mulching ($131.70/acre) and tilling ($2.38-6.44/acre).

Federal Environmental Quality Incentives Program (EQIP) EQIP provides financial and technical assistance to agriculture producers in order to address natural resource concerns and deliver environmental benefits. Program recipients may receive (directly or indirectly) payments, in the aggregate of up to $450,000. Normally the program covers about 1/3 of costs. Practices include reincorporation, tilling, and mulching. Socially disadvantaged, beginning and limited resource farmers, Indian tribes and Veterans are eligible for an increased payment rate and may receive advance payment of up to 50 percent to purchase materials and services needed.

State Healthy Soil Program: The California Department of Food and Agriculture (CDFA) provides financial assistance for farmers demonstrating the implementation of conservation management practices that sequester carbon, reduce greenhouse gases and improve soil health. In 2017, 12 projects that included an element of mulching were funded. For example, $50,000 was awarded to Silverwood Ranch in Fresno to chip and re-incorporate into the soil two fruit orchards totaling 205 acres. The funding level to date is $7.5 million and future funding for Healthy Soils in included in the natural resources bond, SB 5.

State FARMER Program: The Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program provides funding through local air districts for agricultural harvesting equipment, heavy-duty trucks, agricultural pump engines, tractors, and other equipment used in agricultural operations. In September 2017, the FARMER program was allocated $135 million from the GGRF fund.

Suggested Legislative Actions

DO SUPPORT:

- Funding for the California Healthy Soils and FARMER programs;
- The integration of funding resources into a one-stop-shop for farmers to easily access;
- Responsible expansion of composting facilities and on-farm composting practices;

DO NOT SUPPORT:

- A biomethane or biogas procurement standard;
- Subsidies for the existing biomass industry; or
- Extension of contracts with existing biomass incinerators.

Works Cited

UC Davis, *Whole Almond Orchard Recycling and the Effect on Second Generation Tree Growth and Soil Fertility* (2014) http://ucanr.edu/sites/2015jointsiconference/files/221563.pdf

Johnson Farms, *Whole Orchard Soil Incorporation* (2017). <http://valleyair.org/cvsummit/documents/presentations/Session07-Mike-Curry.pdf>