Sustainable Conservation

CONSERVATION TILLAGE

PARTNERING WITH DAIRIES FOR CLEAN AIR

THE CHALLENGE

Conventional farming techniques, practiced on more than nine million acres in California's Central Valley, involve significant soil disturbance which increases dust and diesel pollution.

Experts identify farming as a significant source of air pollution in the Central Valley. In some regions, crop cultivation and harvest contribute significant volumes of dust each day. Tractors that run on diesel also release emissions which can lead to ozone and smog pollution.

Central Valley residents – especially children and the elderly – suffer from a variety of respiratory problems due to pollution from farming and other sources. At least 10% of the population is afflicted with chronic breathing disorders. Fresno County, the leading farming region in the nation, has the country's highest asthma mortality rate.

RESULTS

- On average, farmers using conservation tillage have reduced their dust and diesel emissions by up to 70% and 50%, respectively
- Conservation tillage is now practiced on nearly 300,000 acres in California's Central Valley – nearly 450 square miles
- In 2010 alone, farmers using conservation tillage saved over $16 million in fuel, labor and maintenance costs

CLEARING THE AIR

Standard cultivation practices result in intensive soil disturbance, and increased dust and diesel pollution (left). Low-impact conservation tillage (right) involves fewer tractor passes to cultivate fields and planting new crops on top of old ones. This results in less dust and diesel emissions, and lower fuel, labor and maintenance costs.

MEASURING EFFECTIVENESS

The success of Sustainable Conservation's efforts to advance the adoption of conservation tillage in California's Central Valley will be evaluated by:

- 50% of dairy silage acres under conservation tillage

"Sustainable Conservation provides the expert know-how, and is there every step of the way to help farmers integrate clean-air practices on their farms."

Dino Giacomazzi
Giacomazzi Dairy, recipient of the 2012 California Leopold Conservation Award
Hanford, CA

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THE SOLUTION

An effective and simple solution to reduce farming's impact on air quality and human health is a suite of low-impact cultivation practices called "conservation tillage."

These include leaving crop stubble (such as corn stalks) on the surface of the soil and planting a new crop right on top. Unlike conventional tillage, the remaining crop residue protects the soil from erosion and prevents wind from blowing it into the air. Conservation tillage also involves reducing the number of tractor passes farmers make to prepare fields for planting. Statewide, conservation tillage could dramatically cut dust and diesel pollution from farming compared to standard cultivation methods.

Conservation tillage also greatly lowers fuel, labor and maintenance costs – all without harming crop yields. Since 2003, Central Valley farmers have saved tens of millions of dollars.

OUR STRATEGY

With partners, Sustainable Conservation will promote the use of conservation tillage on dairy silage fields throughout the Central Valley to dramatically cut air pollution, benefit farmers' bottom lines and local farm economies, and help communities throughout the state breathe easier. Today, conservation tillage is used on less than 25% of all dairy silage fields. Our goal is to reach 50% over the next three years.

KEY COMPONENTS

EXPANDING PARTNERSHIPS

We will build a critical mass of dairy farmers to expand the number of acres under conservation tillage, leveraging existing partnerships with agricultural, academic and nonprofit leaders.

REMOVING BARRIERS TO ACCELERATE ADOPTION

We will address the technical and financial barriers currently preventing wider use of conservation tillage, including identifying sources of funding for dairy farmers to try conservation tillage. Partnering with federal agencies, state air-quality districts, academics and farming manufacturers, we will increase direct access to conservation tillage equipment and technical training.

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