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California farmers adopt reduced tillage practices

By Dairy Herd news source | Wednesday, April 28, 2010



With asthma and economic challenges plaguing California's Central Valley, local farmers are simultaneously clearing the air and reducing their costs, according to a new study published today by a group of academic, farming and environmental leaders. Between 2004 and 2008, Central Valley farmers switched to "reduced tillage" practices on nearly 20 percent of land used to grow row crops like corn and wheat silage.

These tillage practices cut the number of tractor passes needed to prepare fields for planting, which means lower fuel and labor costs for farmers, and less dust and diesel pollution in the air. Local farmers save money while they protect clean air for their neighbors.

"My philosophy is that good environmental stewardship must be profitable to be sustainable," says Hanford, Calif., dairy farmer Dino Giacomazzi. "Our conservation tillage program has been helpful to our family business during these hard economic times. Not only have we dramatically reduced inputs but have also increased yield and the quality of our crops as a result."

In 2008, Central Valley farmers cultivated more than 416,000 acres using reduced tillage practices. Conservation tillage, which involves leaving crop stubble on the soil and re-planting over the top, increased from 2 percent to 10 percent of acres under cultivation.

"These effective cultivation techniques are good for everyone – not just farmers," said Ashley Boren, executive director of Sustainable Conservation, who co-authored the study. "They help reduce dust and diesel pollution in the Central Valley so local residents breathe cleaner air."

Statewide, reduced tillage practices like conservation tillage and minimum tillage could cut dust pollution from agriculture by up to 85 percent and diesel pollution in half. That's good news for the California San Joaquin Valley, which according to the American Lung Association ranks in the top 25 most-polluted regions of the U.S. and experiences air quality that hovers at levels dirty enough to endanger lives.

"Breathing in particle pollution increases the risk of early death, heart attacks, strokes and emergency-room visits for asthma and cardiovascular disease," said Janice Nolen, assistant vice president for National Policy and Advocacy at the American Lung Association. "Particle pollution also may affect how children's lungs grow and function."

The survey, led by the Conservation Tillage and Cropping Systems Workgroup, was conducted as an ongoing comparison of annual row crop acreage farmed under a variety of tillage methods in nine Central Valley counties – including Fresno, Kern, Kings, Madera, Merced, Sacramento, San Joaquin, Tulare and Yolo counties. Crops surveyed included silage, grains, tomatoes, cotton, dry beans and melons.

The survey received input from area farmers, agricultural specialists from the University of California and experts from the Natural Resources Conservation Service, which supports landowners in natural resource conservation and enhancement. Results were based on acreage totals from 2008 County Agricultural Commissioner assessments, and were compared with similar surveys conducted in 2004 and 2006.

[Download the survey.](#)

Conservation tillage involves leaving at least 30 percent of crop residue (such as corn stalks) on the surface of the soil and planting a new crop on top. The remaining crop residue protects the soil from erosion and prevents wind from blowing it into the air. Minimum tillage includes practices that reduce the overall number of tractor passes over fields by at least 40 percent. Farmers report reductions in operating costs between 30 percent to 40 percent per year.

Reduced tillage practices also produce beneficial organic material which improves the soil's ability to retain water and improves its quality.

Source: *Sustainable Conservation*

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