

CALIFORNIA

TILLAGE

Winter 2008



Sustainable Conservation

Because the Environment is Everyone's Business



A quarterly
publication of
Sustainable
Conservation

INTRODUCING THE CALIFORNIA TILLAGE NEWSLETTER

Reduce passes, reduce diesel usage, save water and cut down on emissions

Welcome to the first edition of the *California Tillage newsletter*. The goal of this newsletter is to provide the latest information on conservation tillage, strip-till and no-till trends in California.

If you're not familiar with conservation tillage, it is a method of cultivating crops to reduce soil erosion. Soil lost through water erosion is greatly reduced when crop residue is left on the soil surface and soil drainage, organic matter, and moisture content are improved. Conservation tillage also reduces air pollution (dust and diesel emissions), sequesters carbon (inhibiting global warming), improves water quality, and creates wildlife habitat.

Conservation tillage uses fewer pieces of equipment to cultivate a field as conventional tillage, translating to lower fuel consumption and labor costs, decreased material inputs, and less maintenance spending. In total, savings have been estimated between \$40 and \$75 per acre per year, a large savings compared to input cost and crop value.

While conservation tillage is widely used throughout the Midwest, comprising more than half of the crop acreage in the U.S., less than 1 percent of California row crops use this method. Research shows that California farmers are now taking another serious look at conservation tillage given the high cost of diesel, installing underground drip irrigation systems and potential for lowering production costs.

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CONVENTIONAL VS. CONSERVATION TILLAGE

The tractor on a conventionally tilled plot (Left) stirs up more dust pollution than the same tractor on a conservation tillage plot (Right).



Conservation tillage and drip tape make winning combo

San Juan Ranching Co., in Dos Palos, Calif., has successfully utilized conservation tillage in its farming operation for more than 10 years. The use of conservation tillage has allowed them to implement drip irrigation on 1,800 of their 6,000 acres. San Juan Ranching Co., grows 6,000 acres of tomatoes, cotton, alfalfa, grain corn and some specialty crops including chili peppers and melons.

“We are slowly moving all of our acreage over to a combination of drip tape and conservation tillage,” says Dan Burns, foreman at San Juan Ranching Co.

This combination saves water. Conventional fields are flood irrigated and use 3.6-acre-feet of water, compared to 1.8-acre-feet of water on the drip tape/conservation tillage fields. “The water savings is mainly due to drip, but we couldn’t implement drip irrigation without conservation tillage,” Burns says.

In addition to water savings, Burns says they have seen 5 to 10 percent increase in yields over the conventional fields.

Burns plans to remove the drip tape after 8 to 10 years and rip the ground and replace the tape.

Two different methods of conservation tillage are utilized at San Juan Ranching Co. “Each method saves us money over conventional farming, however the performer realizes us the biggest savings at \$100 per acre in reduced passes,” Burns says.

Here are the farming methods used at San Juan Ranching Co.:

Conventional tillage – disc 2x’s, chisel 1x, disc 2x’s, land plane 1x and list 1x (7 passes)

Conservation tillage, method #1 – disc 1x, chisel 1x, Wilcox eliminator 1x, land plant 1x and list 1x (5 passes)

Conservation tillage, method #2 – Wilcox performer 2x’s (2 passes)

To help break the soil up, San Juan Ranching Co., plants a cover crop of wheat on the drip tape fields. The variety of wheat planted has a 5-foot taproot that naturally breaks up the soil. In the springtime, the cover crop is burned off.

For more information on the Wilcox performer or Wilcox eliminator go to: www.wilcoxap.com



Bottom photo Wilcox performer.
Top Right photo Wilcox eliminator.

Trying reduced tillage next spring?

The Conservation Tillage work group at the University of California Extension has a number of implements on loan. If you could like to try conservation tillage on a limited basis, please contact Jeff Mitchell at (559) 303-9689. We can also put you in touch with experienced growers or custom farmers in your area to help you get going!



Sano Farms in Firebaugh, Calif., has been utilizing conservation tillage and drip irrigation tape for five years. When owner Alan Sano and farm manager, Jesse Sanchez started looking at utilizing conservation tillage they did a trial run on 450 acres of tomatoes. By the following year all 2,680 acres of tomatoes were converted to conservation tillage and drip irrigation.

Farm manager, Jesse Sanchez saw several advantages in utilizing conservation tillage. “We saw an improvement in the soil, it

**40 percent
cost savings**

had better water holding capacity, our crops had higher yields and overall it was better for the environment.” In addition to these benefits Sano Farms has seen a 40 percent cost savings from making the switch from conventional to conservation tillage. And, they have been able to use 75 percent less equipment.

“I think conservation tillage is the best choice to farm, produce quality crops and to help the environment. It’s also the best way to be competitive in today’s business world,” Sanchez says.

Conservation tillage workgroup ignites the reduced tillage system in the Central Valley.

The conservation tillage workgroup is a diverse group of farmers, university scientists, equipment manufacturers and others that has emerged to offer wide-ranging services aimed at promoting reduced tillage alternatives in California’s Central Valley.

Led by Dr. Jeff Mitchell, the Conservation Tillage (CT) workgroup has helped to ignite the conservation tillage movement in California. Prior to the past five years, tillage management systems changed relatively little since irrigation and cropping intensification began throughout this region more than 60 years ago. In a short span of seven years, the Workgroup has grown to over 1,000 members and has conducted over 60 demonstration evaluations of CT systems. As high diesel prices and water shortage have become a reality of farming in the San Joaquin Valley, the CT workgroup has stepped in to exchange ideas and advice about how farmers can change their tillage system to reduce production costs.

The CT workgroup is in the process of arranging the 2009 national tour for local farmers interested in visiting farming operations in States where conservation tillage has been used successfully for many years. Please contact Jeff Mitchell for more information at (559) 303-9689.



STRIP TILLING IN THE SAN JOAQUIN VALLEY

Strip-till is a smart approach that will help you save water and diesel, cut down on particulate matter and other emissions, reduce tillage passes, more effective and efficient use of your applied fertility, and achieve a blue ribbon seedbed – resulting in stellar yields and an impressive bottom line! Orthman Manufacturing has developed a systemic approach with the best-

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trained support people out there to make strip tillage workable and profitable year after year.

The use of strip-tillage results in deeper water uptake; increased soil water stored at greater depths than conventional tillage; and improved rooting depths. When crops have a better start early in the season via strip tillage, crop roots follow downward in the vertical tilled zone and take advantage of remnant root channels that would be destroyed by inversion and rolling-over till systems. Crops planted using a strip tillage system will outgrow the root system of conventional tillage. Corn yields have

increased over the 6 years of an irrigated study by 5 to 15.5 percent in strip-till over conventional till.

So what does strip-till require of the grower? Strip tillage requires an open mindset that considers pre-plant tillage in a new light for an improved bottom line, considerably better pre-plant timing, and combining several efforts into one tool for the right purposes.

For more information please visit: www.precisiontillage.com.



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