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Experimenting with new irrigation systems and crops requiring less water, Valley farmers are at

# A PIVOTAL POINT

in the search for more efficient ways to use a limited water supply



ERIC PAUL ZAMORA/THE FRESNO BEE

John Diener of Red Rock Ranch near Five Points is using a watering system that pivots in a circle to irrigate tomatoes, an approach that is common in the Midwest.

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By Robert Rodriguez  
The Fresno Bee

From the sky, John Diener's farm looks like a swath of Kansas grafted onto the rugged flatlands of the San Joaquin Valley's west side.

Hundreds of acres of crops grow in a circular patch on Diener's land. The idea is to save water with an irrigation system that rotates around a pivot in the center of each field.

The automated system is common in the Midwest, where farm labor is scarce — but it's gaining traction here as growers adapt to the new reality of farming.

Three consecutive dry years along with re-

strictions on pumping from the Sacramento-San Joaquin Delta — the main source for the Valley's irrigation water — have put west-side family farms at risk.

Many are furiously pumping salty water from deep wells to keep their nut trees and vineyards alive. Others are searching for more efficient ways to use their limited water supply. At least one farmer has created his own underground reservoir.

All the while, farm lenders are keeping a close eye on how their clients will bring in their crops — if they have any.

Diener is among the growers who are doing whatever they can to adjust.

On his west side ranch, tomatoes, peas, al-

falfa, wheat and sugar beets are among the crops that now grow in circles.

Diener estimates the pivot system is 10% to 20% more efficient than furrow irrigation, which can be labor intensive. Generally, furrow irrigation on the west side involves workers moving aluminum pipe from field to field.

The pivot-irrigation system also applies water more evenly, resulting in less waste.

"One of our challenges is how to water more efficiently and in a way where you can get a comparable or better yield from a conventional system," Diener said. "That is what we are after."

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# Water: New approaches to farming sought

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Growers searching for similar answers have packed meetings held by private companies, Fresno State and University of California researchers.

Farmers who can afford it are drilling new wells at a cost of several hundred thousand dollars, said David Zoldoske, who heads the Center for Irrigation Technology at California State University, Fresno. Others are trying to buy water from the California Department of Water Resources' Drought Water Bank — but that can be expensive, and the water isn't delivered until late summer.

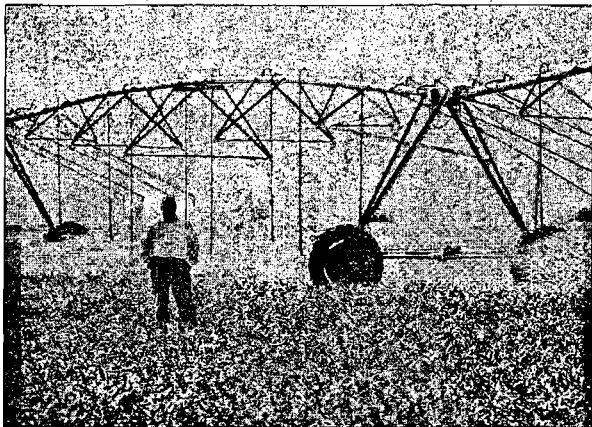
Many farmers who haven't already switched to drip irrigation for their permanent crops are doing so, or looking at better irrigation-management systems.

"I think part of this new reality is that we may never go back to the way it was and the amount of water we had to grow any crop," Zoldoske said. "But this new reality may also send us into areas where we are going to push the envelope, such as using genetically modified crops."

Over the past several years, growers have begun experimenting with crops that require less water or can tolerate salty water pumped from wells. But not all provide the high-value returns of other row crops.

Among the water-saving crops being grown on the west side are safflower, sorghum, garbanzo beans and dryland wheat.

Third-generation farmer Ryan Ferguson is growing 300 acres of garbanzo



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On John Diener's west side ranch, tomatoes, peas, alfalfa, wheat and sugar beets are among the crops that now grow in circles. Diener estimates the pivot system, seen in the background, is 10% to 20% more efficient than furrow irrigation common in the Valley.

beans along with pistachios, processing tomatoes and cantaloupes on his family's 1,700-acre farm. The beans, a lower-value crop, are sold for use in salad bars or to be made into hummus.

In Kings County, farmers are turning to sorghum. Last year, 4,500 acres in Kings County were devoted to sorghum, compared with 45 acres in 2003.

Lemoore-area farmer Craig Pedersen planted about 300 acres of sorghum because it requires less water than corn and can be used as feed supply for

the poultry and dairy industries.

"We are always looking for things that have value, but it is becoming tougher and tougher," Pedersen said.

Another less-thirsty crop being grown in California is safflower, a plant whose seeds are crushed for cooking oil. Statewide, the area of land devoted to safflower crops rose 80% last year to 90,000 acres.

The plant is well-suited to the Valley's arid climate, said Steve Kaffka, an agronomist with the University of Cali-

fornia at Davis.

But switching to new crops doesn't happen automatically. Some farmers have invested in equipment for certain types of crops and may not be able to change. Some are uncertain about the sustainability of newer crops.

"There is some pressure to resist change," Kaffka said. "And there is a limit to everything."

Longtime west-side farmer Dan Errotabere said growing a crop simply because it requires less water isn't the answer.

Much of what is grown on the west side — and especially in the Westlands Water District, one of the regions hardest hit by a shortage of water — is sold under contract to the area's large vegetable processors or canneries.

"You have to grow what they want," Errotabere said. "It has to pay, otherwise there is no point."

Errotabere planted safflower this year, but it didn't pan out. He battled a pest called lygus that spread to some of his other crops.

He followed about 1,200 acres. The rest of his acreage is in almonds, pistachios and pomegranates.

Like others on the west side, he knows bankers' concerns are growing.

"They want to see a detailed water plan, and they want to know how you are going to bring in your crop," Errotabere said.

And Errotabere fears that not everyone will survive.

"Farming has always been going through a downsizing," he said. "This just accelerates it."

That's Marvin Myers' biggest concern.

Myers is among farmers who have weathered past droughts by shrinking acreage and switching to higher-value crops, such as almonds, pistachios and grapes.

The plan worked until their water supply began declining. That's why Myers began an ambitious ground-water banking project near Mendota several years ago. As with a savings account, Myers has judiciously allowed water to seep into the ground and bought supplemental water when he could.

"I've made such a huge capital investment that I knew I had to do something," Myers said. He farms about 6,000 acres of almonds, olives and wheat.

He has banked about 20,000 acre-feet of water, and he has withdrawn about 5,000 so far. He has enough to get through this year and perhaps two more years. But he's not sure what he'll do after that if the government continues to restrict pumping at the delta, and if the dry weather continues.

"I worry about my future and that of my children and grandchildren," said Myers, 75. "It is real difficult to sit down and watch your equity and assets decline. I used to joke that I would keep farming till it was all gone. But now at this stage, I really wonder what am I going to be leaving my family."

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