

## Farmers seek drought solutions at World Ag Expo

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Brothers Ely, 3, left, and Luke Goncalves, 5, both of Dos Palos, explore a LS Tractor LL2101 during opening day of the World Ag Expo at the International AgriCenter in Tulare. (Photo: Steve R. Fujimoto, )

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(Photo: Ron Holman)

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Last year, Leroy Lindo spent part of his time at the World Ag Expo in Tulare looking at the various technologies offered to help farmers save water.

Despite the fact that California was in the midst of one of the worst droughts ever recorded here, the row crop farmer from Gustine decided not to buy any of that technology and instead laid his hopes on a lot more rain and snow than last winter.



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That didn't happen, as this winter has provided only a little more snow in the Sierra Nevada.

So on Tuesday, Lindo was back for the opening day of the 2015 World Ag Expo looking at drip and micro irrigation systems — this year he's ready to buy one.

"The big thing is, there is no waste" as water on a drip system can be directed right onto crops with minimal runoff compared to flooding fields, as he has done on his farm.



New product Deep Root Irrigation during the World Ag Expo at the International Agri-Center in Tulare on Tuesday, February 10, 2015. The device works by delivering water directly below the root zone. (Photo: Ron Holman)

That's important, Lindo said, as he's expecting to receive smaller surface water allocations than normal this year because of the ongoing drought.

He has begun replacing his row crops with almond trees, in part because they use less water. Even so, Lindo said, he worries he may not have enough water unless he invests in an irrigation systems that uses less water.

Many farmers crowded Ag Expo booths last year to see the latest water-saving technology, and — like Lindo — many weren't ready to buy it. This year, though, they increasingly seem ready, said Jonny Branom, project manger for Spokane-based Valley Water Management. Branom was at the Expo hawking his company's center-pivot irrigation systems.

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"It think it's at a point where they're forced to do something" as the drought has entered its fourth year, he said.



Not that farmers weren't improving their irrigation systems and practices before, noted John Vikupitz, president and chief executive officer of Netafim, Ltd., another maker of drip and micro irrigation systems.

In the past few years, the company's sales have been up, and this year — driven by major droughts not only in California but also in the Southwest and Midwest — the company could have record-high sales in the United States, he said.

Vikupitz said he had spoken on Tuesday to farmers who have taken land out of production because of lack of water, though he hadn't yet encountered any who went out of business because of the drought.



Representatives and visitors mingle at the Netafim booth during the World Ag Expo at the International Agri-Center in Tulare on Tuesday, February 10, 2015. The company is celebrating its 50th year in business. (Photo: Ron Holman)

Jerry Chilton of Tulare said he's worried about that possibility, and he's not even a farmer.

"I may not have a job next year," said Chilton, a truck driver who hauls peels from processed oranges to dairies for cow feed.

Because of the drought, some citrus farms he deals with are producing less fruit, and some dairies are going out of business, he explained.

So while he was at the Ag Expo on Tuesday, he stopped at some of the booths for businesses with water-saving technology and picked up brochures that he planned to pass on to the farmers and dairy operators he serves, in case any can make use of these products to stay afloat.

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"The water levels are dropping, wells are going dry, we have no rainfall, no water in the lakes and no snow in the mountains — situation desperate," said Nick Nazaroff, who grows grapes and almonds in the Fresno area.

Though Nazaroff already has dug deeper wells on his farm and installed stronger pumps to pull water from greater depths, he came to the Expo looking for technology to stretch out his water supply.

"We've had tremendous traffic today. I'm a little horse," said Jeff Ciudaj, who debuted his Deep Root Irrigation system this year at the Expo.

The device he invented connects through drip irrigation lines and injects water into the ground at plants' root levels to provide more efficient watering.

He said he was swamped by gardeners and farmers looking for water solutions, and the interest was so high that he has sold 40,000 units — which retail for \$1.50 to \$2.99 — before noon.



Representatives and visitors mingle at the Netafim booth during the World Ag Expo at the International Agri-Center in Tulare on Tuesday, February 10, 2015. The company is celebrating its 50th year in business. (Photo: Ron Holman)

Besides looking to save water, several vendors said, farmers also looking to save on fuel costs and electric costs — as pumps use more energy to pull up water from deeper underground after they dig deeper wells — and this year they're showing particular interest in being able to use their water-saving products through mobile technology.

"It's something that's been around awhile, but now it's picking up popularity as something needed," said Nate Haverkamp, product specialist for water management at Sunnyvale-based Trimble Navigation Limited.

A combination of technology to conduct on-the-ground analysis of crops, soil and topography, along with ground sensors to measure ground moisture, satellite imagery, weather data and even aerial imagery from small, unmanned aerial vehicles are among the products being used to determine where farmers need to water, how much and when.

And additional software and hardware are available to read this data, create watering schedules and control how much water is used to irrigate different areas of farms, the experts here said.

They also said farmers want this technology to be easy to use so they can control irrigation systems not just from their work computers but also from their smart phones and tablets.

"The old-school farmer has really embraced the technology," said Lindo, noting that besides buying a drip irrigation system, he also was planning to look at products that will let him monitor how his almond groves will be irrigated and control it his new irrigation system through smart phone apps.

"I probably have 20, 30 apps on my phone to do everything," he said. "It's smart technology."

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