

5% SOLUTION

Researchers crack wheat's genetic code, open door to higher yields



Joe Proudman/UC-Davis

UC-Davis professor and plant geneticist Jorgé Dubcovsky in the wheat fields at UC-Davis, where researchers recently identified the WAO1 gene that controls the maximum number of grains in a wheat spike. The discovery could help researchers and farmers boost yields by 5%.

By MATTHEW WEAVER
 Capital Press

DAVIS, Calif. — Researcher Jorgé Dubcovsky and his team have identified one of the genes in wheat that increases yield — the holy grail for farmers.

Yield — the amount of wheat grown per acre — is how wheat farmers pay the bills.

“We always joke in wheat breeding that the first three top priorities are yield, yield and yield,” Dubcovsky, a University of California-Davis wheat breeder, told the Capital Press. “There are premiums and discounts for protein, but the grower is paid by the yield. That’s the only thing that the grower gets.”

The gene Dubcovsky and his team discovered controls the maximum number of grains the plant produces. They estimate the discovery could eventually increase yields by as much as 5%.

Breeders devote most of their efforts to pursuing yield, Dubcovsky said.

“You only advance varieties that will yield better than the previous one,” Dubcovsky said. “If not, nobody will buy it.”

But, he said, yield has been “a very difficult trait to crack.”

The reason is many variables impact wheat yields.

One year, the varieties that don’t shatter in the wind will yield more. The next year, there could be a disease. Another year, too much heat.

It’s difficult to pinpoint whether a variety’s overall performance is due to genes or other factors, Dubcovsky said.

See *Wheat*, Page 13

Joel Mackendorf/UC-Davis
UC-Davis wheat breeder Jorgé Dubcovsky holds wheat stalks in his hands. Identifying the wheat gene for yield is an important step for agricultural research, Dubcovsky says. “Food is not something that’s sold in the supermarket,” he said. “Food is something you need to fight for and you need to invest for, if you want to have food on the table tomorrow. Producing food takes work for a lot of people.”



Washington snowpack relishes awesome April

By DON JENKINS
 Capital Press

Washington’s snowpack had its best April in more than 30 years, state Department of Ecology drought coordinator Jeff Marti said Monday.

Snowpacks across the state usually melt in April, but this year they grew and held more water at the end of the month than at the beginning.



Nick Bond

Olympic and Blue mountains, was 114% of normal as of May 1, compared to 80% on April 1.

Since 1990, there have been 12 snowpacks larger as of May 1. But no snowpack has rallied from so far below normal on April 1 to above normal at the end of the month.

“This year was a real outlier,” Marti said. “It was just gangbusters.”

The “average” is based on snowpacks between 1991 and 2020. An above-average snowpack promises a good irrigation season. Basin snowpacks Monday ranged from 128% in the Upper Columbia to 87% in the Lower Yakima.

No part of the state was left out. The statewide snowpack, an averaging of basins as different as the

The Upper Yakima and Naches basins, both important for Yakima Valley irrigation, were above normal Monday after beginning the month below average.

The snowpack has probably finally peaked, Natural Resources Conservation Service snow supply specialist Scott Pattee said Monday.

The snowpack typically tops out around April 1. While snow is not unusual in April, the amount and geographic spread this year was amazing, he said.

“It just kept coming and coming after a disappointing March,” Pattee said. “It was pretty evenly distributed, everybody got good now.”

Before the winter began, the National Weather Service’s Climate Prediction Center said a La Nina tilted the odds in favor of a cool and wet winter in Washington.

See *Snowpack*, Page 13

Farmers pay higher water rates, fees during drought

By SIERRA DAWN McCLAIN
 Capital Press

HOLLISTER, Calif. — California walnut grower Tim McCord is at the dry end of the spigot, facing a zero-water allocation from the Central Valley Project, which is supposed to deliver to his local San Benito County Water District.

“I don’t know what I’m going to do,” said McCord.

The farmer is not just concerned about his orchard; he’s also frustrated that he owes substantial water-related taxes to the district, and, if water is eventually delivered, he’ll be charged \$309.75 per acre-foot — more than in non-drought years.

McCord is not alone. During drought, it’s common for farmers across the West to pay higher water-related rates, assessments, fees and taxes than during wet years.



Sierra Dawn McClain/Capital Press

Workers install irrigation infrastructure for main lines and sub main lines. Across the West, water agencies and irrigation districts are facing higher costs due to drought. In many cases, those organizations pass on their costs to farmers.

This is because drought is costly for water suppliers, which often pass on their costs to customers.

According to the Public Policy Institute of California, suppliers’ revenues generally come from water users paying for deliveries. If a supplier doesn’t have as much water to deliver,

revenue shrinks unless the supplier increases rates.

Drought can also degrade water quality, damage infrastructure, demand more management and drive suppliers to buy supplemental water.

Although details vary

See *Water*, Page 13

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