Researchers developing heat tolerance in tomato seeds

By MATTHEW WEAVER
Capital Press

Carl Jones

Researchers are using a wild tomato relative to look for heat tolerance and seed quality traits, the better to improve seed performance. UC-Davis professor Kent Bradford says the results could benefit a wide variety of crops.

Researchers are working to identify genes that boost heat tolerance in seeds.

The researchers at the University of California-Davis and the University of Florida received a $1.1 million grant from the Foundation for Food and Agriculture Research.

Most seeds have a tough time sprouting and growing in temperatures above 105 degrees Fahrenheit. For some seeds, the best temperature is 70 to 90 degrees.

The researchers want to see how heat affects the seed quality, said Kent Bradford, a UC-Davis professor.

"We grow lettuce every day of the year to meet the lettuce market, which means we have to plant every day of the year somewhere," Bradford said. "Plants pay more attention to temperature than anything except light."

The impact of the environment on the mother plant can affect a seed's performance.

The work has the most direct implication for seed companies.

It's important for them that the seeds germinate at roughly the same time, Bradford said. Later-germinating seeds are either weeds or require a second harvest.

Farmers would also be more confident that the seed they use will perform, Bradford said.

The researchers are primarily using tomatoes as a model crop. California produces about a third of the world's processing tomatoes, Bradford said.

"It's a global crop," he said. "A lot of the tomato seed is produced under fairly controlled conditions in the greenhouse, because it requires hand pollination. If we can find what are the optimal conditions, that helps them optimize seed production."

Tomatoes don't fare well as the weather gets hotter.

"We are approaching that temperature more and more frequently in the summer in California," Bradford said.

Some wild tomato relatives are more temperature-tolerant than domesticated plants, he said. They're looking for heat tolerance in tomato seed from Peru and Chile.

The researchers will identify important genes in those seeds. Once identified, more resistant genes can be added using conventional breeding or by removing a specific gene, which is not considered a genetically modified organism, or GMO, Bradford said. GMO plants could present more regulatory and marketing hurdles, which many companies aren't anxious to take on, he said.

The results could also have implications for other crops, such as spinach, corn, soybeans or cotton.

UF ornamental plant breeder Alfred Huo's research involves using "very powerful" RNA molecules that control flowering and development. That could lead to identifying and applying trigger molecules, Bradford said.

Idaho revises wolf seasons in line with new state law

By BRAD CARLSON
Capital Press

The Idaho Fish and Game Commission June 17 amended wolf hunting and trapping seasons to align with a new a state law aimed at reducing the population of the predator.

But wildlife managers said the action is not expected to result in a substantial reduction in the number of wolves anytime soon.

"It's been widely but inaccurately reported that the new law will reduce Idaho's wolf population by 90%," Fish and Game Director Ed Schriever said in a release. "However, the commission's action will reduce wolf conflicts while maintaining a viable wolf population that is not subject to relisting under the Endangered Species Act."

He said the commission's action provides a "meaningful balance" that focuses on providing hunters and trappers with additional tools to address conflicts between wolves, livestock and other big game. The action also focuses the new management tools that Senate Bill 1211 allows in the right places and at the right times, he said.

The new law substantially increases the allowed harvest and methods of take, primarily to reduce wolf-livestock conflicts. It aims to bring the statewide population closer to 150, the 2002 federal baseline for avoiding relisting gray wolves under the Endangered Species Act.

Fish and Game camera counts in the summers of 2019 and 2020 pegged the population just above 1,500 despite a total harvest of more than 500 wolves both years.

Commissioner Derick Attebury of Idaho Falls told Capital Press the action provides "additional tools and opportunities to reduce the existing wolf population, which the commission supports. We hope our hunters and trappers will utilize the changes in harvesting additional wolves."

"To this point, the tools available to sportsmen, and other control measures, have not been adequate to control the population," said Don Ebert, a commission member from the Clearwater region of north-central Idaho. "I believe that we're not going to put the wolf population in peril. We'll be lucky to be able to control the population."

"We're still going to have harvest reports" from hunters and trappers, "so we will have harvest data in real time," Fish and Game Public Information Supervisor Roger Phillips said.

A decade of hunting and trapping in Idaho has resulted in gradual increases in harvest but not a decrease in the population, he said. With the commission's recent action, "we expect to see an increase in harvest, but not enough to drop that population down to levels where we're concerned about relisting."

SB 1211 establishes a year-round trapping season for wolves on private property. It allows unlimited purchase of wolf tags. It also specifies that any method used for taking wild canines, such as foxes and coyotes, can be available for taking wolves.

Idaho has 99 hunting units. The commission voted to establish wolf seasons allowing expanded hunting methods from Nov. 15 to March 31 on public land in 43 hunting units where elk are below population objectives or where there are histories of chronic livestock depredation.

Meatpacking strike averted at Smithfield plant

By CAROL RYAN DUMAS
Capital Press

United Food and Commercial Workers Local 304A, which represents nearly 3,000 South Dakota food workers, announced on Friday a new agreement with Smithfield for workers at its Sioux Falls pork plant.

UFCW 304A and the union's members successfully secured pay increases and expanded benefits for workers at the plant. The boost in pay represents a strong investment in these workers who are essential to protecting the food supply chain in South Dakota and across the country, UFCW said in a press release.

"Today's new contract for Smithfield meatpacking workers in Sioux Falls provides the strong pay and benefits that these brave men and women have earned on the frontlines of this pandemic," said B.J. Motley, president of Local 304.

"In the past year, these South Dakota essential workers put their own health at risk every day to keep our food supply secure," he said.

"With this new contract, meatpacking workers are sending a powerful message that it is time for every company in the industry to step up and recognize the incredible sacrifices made and danger faced by these frontline workers who helped millions of Americans put food on the table during this health crisis," he said.

The union workers voted to reject Smithfield's contract on June 3 and voted to strike on June 7.

Idaho Wheat/Facebook

Idaho Wheat Commission Executive Director Casey Chumrau and University of Idaho Director of Technology Transfer Jeremy Tamsen sign a licensing agreement for UI Cookie.

New Idaho wheat variety UI Cookie royalty-free

By MATTHEW WEAVER
Capital Press

Wheat growers and the University of Idaho recently signed a licensing agreement for a new spring wheat variety.

The soft white spring variety UI Cookie, from breeder Jianli Chen, based in Aberdeen, was 14 years in the making.

Chen said she hopes to reach 5% of spring wheat production with the new variety. It was released to replace the variety UI Stone.

UI Cookie has good yield, improved stripe rust resistance, Fusarium head blight tolerance and threshing ability. It's slated for dryland production, primarily in Southern Idaho.

The variety is public, with no royalty.

The Idaho Wheat Commission negotiated an exclusive license with the University of Idaho to commercialize the variety. The commission will manage the first seed expansion from foundation to registered seed through provisions in a sublicense with the seed producer.

The commission recognizes the importance of royalties, which can be used to fund the development of future varieties, executive director Casey Chumrau told the Capital Press.

UI Cookie was a good agronomic and economic opportunity to make a gesture to farmers who are investing in research and breeding programs through their checkoff dollars, she said.

"We have heard frustrations in the past of paying on the front end and the back end," she said. "It's not going to work with every variety, but in this particular case no commercial company was interested despite the excellent end-use quality."

Because of the "excellent results," the variety has possibilities beyond Southern Idaho, Chumrau said.

"That is something the market would have to determine," she said. "We're not going to go out and advertise this variety in Washington and Oregon, but we would be happy to see this variety take off."

Chumrau said grower response so far is excellent, during a particularly tough growing year due to drought.

"They say UI Cookie looks better than a lot of things they have planted next to it," she said.

Chumrau expects UI Cookie to be available on a limited basis in 2022, and more widely available in 2023, assuming seed dealers continue to expand production.