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Idaho study seeks optimum harvest, storage dates for peaches, nectarines

By SEAN ELLIS
Capital Press

PARMA, Idaho — The University of Idaho's fruit program has received a \$161,000 grant for a project that researchers believe could make peach and nectarine production in the state more competitive in the world market.

The project seeks to determine the optimum harvest dates as well as storage life of 15 promising new peach and nectarine cultivars.

UI researchers selected those varieties out of 60 they studied in a previous project.

Determining the best times to harvest them in Idaho conditions is the next step, said fruit researcher Essie Fallahi, who heads UI's pomology program at the university's Parma research station.

"The new question we have is, what is the optimum time ... to harvest them and how long do we want to store them to have the maximum shelf life," he said.

Researchers will measure fruit characteristics such as sugar content, firmness and bruising to determine which varieties maintain their quality longer in storage.

"Everybody is very excited about this project because



Sean Ellis/Capital Press

Research associate Tom Elias cuts open a peach at the University of Idaho's Parma research station Sept. 19. Parma researchers have received a \$161,000 grant for a project that seeks to make peach and nectarine production in Idaho more competitive in the global market.

it's targeting the very specific questions that growers are interested in," Fallahi said.

Commercial fruit growers said knowing the ideal harvest times and storage capacities of these varieties will help them make better management and shipping decisions.

"Knowing optimum harvest dates (and) how long they will last after we pick them dictates a lot of things to us as growers and shippers," said Jerry Henggeler, co-owner of

Henggeler Packing Co., one of the state's largest commercial fruit orchards. "It's (information) that definitely would be advantageous to growers in this area who grow that fruit."

Commercial fruit growers in the region tend to pick fruit when it's greener and harder so they can maximize shelf life, said Michael Williamson, manager of Williamson Orchards and Vineyards.

But that can lead to less than ideal quality when the fruit reaches the consumer, he said.

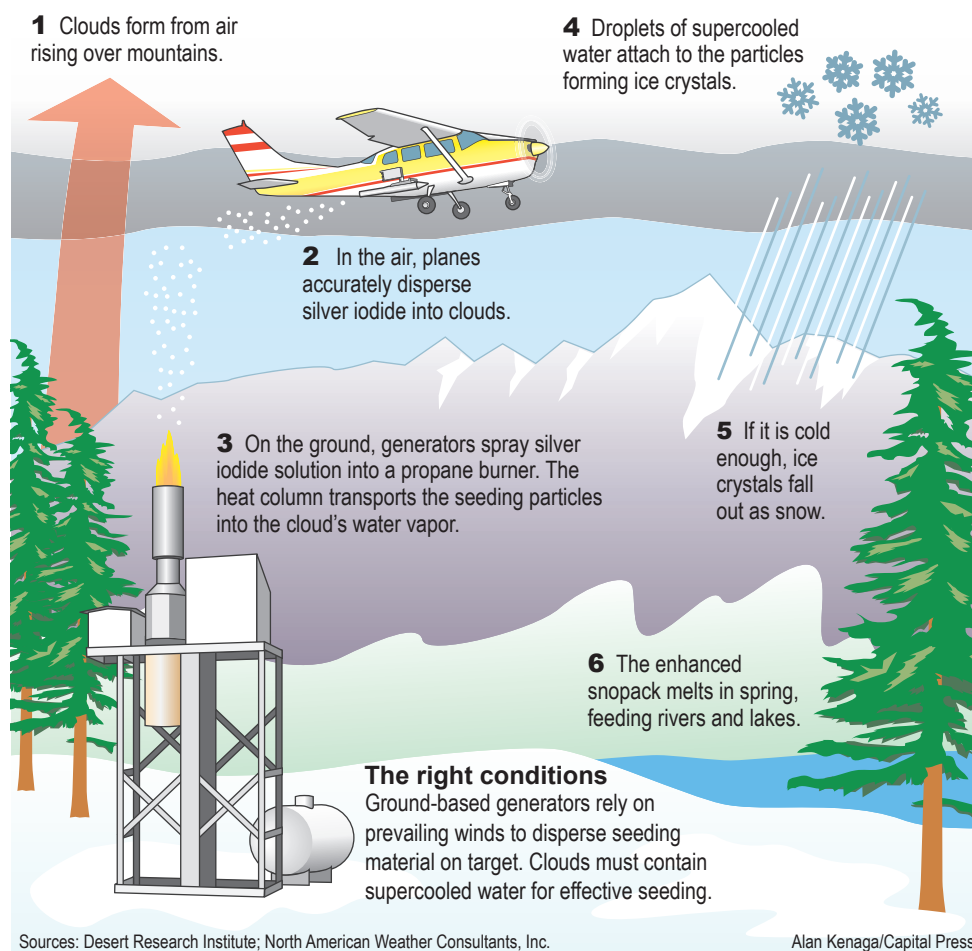
"When you pick peaches, you're up against the clock," Williamson said. "If (Essie) can find that optimum harvest date and storage life ... that would be very valuable information."

The grant was awarded by the Idaho State Department of Agriculture and some of it will be used to hire a graduate student. The two-year project started this year and Fallahi expects Idaho fruit growers will begin planting some of the studied cultivars in 2018.

"In this project, we expect to identify cultivars of peaches and nectarines that have better post-storage flavor and taste as a result of optimum harvest time and storage life," the project's grant application states.

How cold cloud seeding works

Since its discovery in the late 1940s, cloud seeding has proven effective at changing cloud structure and producing ice crystals that fall as snow or rain, although quantifying the amount of additional precipitation can be difficult.



Sources: Desert Research Institute; North American Weather Consultants, Inc.

Alan Kenaga/Capital Press

Cloud seeding study planned in Idaho's Payette range

By JOHN O'CONNELL
Capital Press

BOISE — Officials say a planned study of storms passing through the Payette range this winter should provide first-of-its-kind data on the physics of cloud seeding, enabling weather-modification programs to better quantify their results.

The \$2.1 million research project, funded by the National Science Foundation, will involve Idaho Power Co., the University of Colorado-Boulder, University of Wyoming, University of Illinois and the National Center for Atmospheric Research.

"We are interested in understanding the natural dynamic and micro-physical processes by which precipitation forms and evolves," said Katja Friedrich, a professor with the University of Colorado's Department of Atmospheric and Oceanic Sciences, adding the data could also help with selecting generator sites and the best types of clouds to seed. The process involves releasing silver iodide into clouds to form more ice nuclei and bolster mountain snowpack.

Jeff French, an assistant professor of atmospheric sciences at the University of Wyoming, said this will represent the second major study on cloud seeding since improvements in instruments recently rekindled interest in the subject, after seeding research halted in the early 1980s.

The University of Wyoming finished the other recent study in the winter of 2014, but French emphasized seeding infrastructure in the Payette, where Idaho Power has long



Courtesy of Jeff French

The University of Wyoming's Beechcraft King Air plane will gather data from within clouds to analyze the effectiveness of cloud seeding in Idaho's Payette range as part of a \$2.1 million research project.

run a seeding program, is far superior to the area analyzed in Wyoming.

French said the Wyoming project utilized only ground-based seeding generators and relied on modeling of cloud response. For the Payette project, his university will provide a King Air plane to fly into clouds as they're seeded by another aircraft and ground-based generators, recording results for comparison with unseeded clouds.

"We need some validation of the production of ice due to cloud seeding," French said. "That's what we'll be able to get with measurements of the King Air — how many ice crystals are being produced — then we can verify our model is capturing this correctly."

French said the additional research is especially timely for Wyoming, which recently completed a six-year seeding pilot project and is commencing with a state-sponsored program. Idaho Power initially experimented with cloud seeding in 1995, and has administered a program since 2003 to benefit its hydro-power operations.

Jon Bowling, the electric company's engineering lead,

explained the program will have a roughly \$3.6 million budget this winter, with partners contributing more than \$1 million. Pledges for this winter from water users include \$600,000 from the Idaho Water Resource Board, \$125,000 from the Boise water district, \$125,000 from the Wood River water district and \$200,000 from the Upper Snake River water district. The company also plans to meet with the water board about additional funding to further develop tools to verify benefits of cloud seeding, down to the acre-foot.

Shaun Parkinson, Idaho Power's senior water management engineer, said the program has grown its infrastructure by 40 percent during the past two years but will add only three new generators to the system for this winter. In the future, Idaho Power will prioritize adding a second aircraft in the Upper Snake, he said.

Last winter, Idaho Power estimates its seeding increased the snowpack in the Payette by 11.5 percent, in the Boise by 9.4 percent, in the Wood River by 5.4 percent, in the Northern Snake by 4 percent and in the Eastern Snake by 5.4 percent.

IGWA, Rangen re-enter settlement talks

By JOHN O'CONNELL
Capital Press

BOISE — A recent Idaho Supreme Court water right ruling has renewed settlement negotiations in the Rangen Inc. trout farm's call against junior Eastern Snake Plain groundwater users.

Officials of Idaho Ground Water Appropriators Inc. say a possible outcome is construction of a second, shorter and more energy-efficient pipeline to mitigate the Hagerman trout farm for up to 9.1 cubic feet per second of reduced flows to its spring. The reduced flows were attributed to junior groundwater pumping west of a geologic feature near American Falls known as the Great Rift.

In February 2015, IGWA completed a \$4 million mitigation pipeline running up a cliff wall and spanning more than a mile from the Magic Springs hatchery to Rangen's

raceways.

The pipeline has been operating ever since, but IGWA attorney T.J. Budge said the sides re-entered negotiations after the Supreme Court affirmed IGWA's claim to a 12 cubic feet per second water right on the Bridge Diversion of Billingsley Creek.

Rangen had been using water from the Bridge Diversion for decades before IGWA filed for the water right in 2013.

The Supreme Court concurred with IGWA in February that Rangen's right applies only to a feature at the head of Billingsley Creek, called the Curren Tunnel. In its May 27 ruling, the high court rejected Rangen's claim that IGWA shouldn't be entitled to assume the Bridge Diversion water right solely for mitigation purposes, arguing mitigation doesn't legally constitute a beneficial use of water.

"Mitigation has been rec-

ognized as a beneficial use both in agency and judicial proceedings," the court's decision reads.

Budge said meetings have been productive as both sides seek a mutually beneficial permanent resolution. If negotiations break down, Budge said IGWA groundwater districts have already consented to move forward with condemnation proceedings and pursue IDWR approval of a fifth mitigation plan to forcibly build a pump station and pipeline, with an estimated construction cost under \$500,000, on Rangen's property.

Budge said IGWA's ultimate course should be clear within a couple of weeks.

"Rangen does not want a pump station on their property, and our folks want to mitigate as reliably and cost effectively as we can," Budge said. "We've explored other ways to decide if there's a win-win available."

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