GMO ban creates uncertainty for scientists

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Hawaii County set itself apart from much of the rest of the state in December by effectively banning the large biotech seed companies that have become a major, though controversial part of Hawaii agriculture.

But with a ban also on the outdoor testing of transgenic crops, can the Big Island, home to genetically modified papaya, still be a place for genetic research?

Six months later, the answer isn't entirely clear, though one scientist says he will no longer consider it as an option.

"It will prevent us from using biotech as a solution" to agricultural issues, said Russell Nagata, Hawaii County administrator for the University of Hawaii’s College of Tropical Agriculture and Human Resources.

"It forces us to look at it in a different manner," he added, following a panel discussion on genetic modification Thursday evening. It may be slow, it may not be as effective."

Scientists interviewed say it is necessary to grow modified crops outdoors to test their effectiveness.

While they say they use safeguards to prevent the spread of genes, critics of genetic modification believe outdoor testing presents too much risk. They also question the approval process.

"We are looking at the precautionary principle," said Kohala Councilwoman Margaret Wille during the panel discussion sponsored by the Hilo chapter of the American Association of University Women. Wille introduced the bill restricting the use of transgenic crops.

Under the county’s law, testing can occur but it must be done indoors.

Nagata said his Hilo-based office was not conducting research on genetic engineering when the law was enacted.

For those with projects already in progress, the law provides less certainty.

Michael Shintaku, a plant pathologist at the University of Hawaii at Hilo, said he is continuing his research on creating genetically modified lettuce resistant to the tomato spotted wilt virus but is unsure of whether he can get it approved with the current restrictions.

The virus is transported by insects, and he thinks he can create resistance through processes similar to what allowed Rainbow papaya to be resistant to the ringspot virus.

Shintaku said the virus impacts lettuce growers in Waimea. Phone calls to farmers weren't returned by press time.

"We are just kind of waiting" to see what happens, Shintaku said.

Of any Big Island institution, the U.S. Department of Agriculture’s Pacific Basin Agricultural Research Center in Hilo may be the most involved in genetic research.

While genetic modification makes up a small portion of work at PBARC, its website lists several ongoing projects.

They also include the development of virus-resistant lettuce in addition to research on virus-resistant tomatoes and orchids, and disease-resistant anthurium.
Multiple attempts to reach PBARC were unsuccessful.

Dennis Gonsalves, a creator of Rainbow papaya and a former PBARC director, said officials are likely reluctant to speak to the media due to the sensitive nature of the topic.

That is, at least not without approval from USDA headquarters.

“I’m almost certain they always got to go clear up to Washington,” he said.

“Given the situation now, I think they are extremely conservative.”

Genetic research remains ongoing elsewhere in the state.

So far this year, the USDA approved 34 permits for field tests of genetically modified crops in Hawaii.

Almost all went to biotech companies for corn and soybean research.

The USDA also issued permits to the University of Hawaii at Manoa for virus-resistant bananas and the Hawaii Agriculture Research Center for papaya.

UH-Manoa also applied for a permit to test transgenic pineapple. That application is pending.

The county’s law provides an exemption for papaya growers, which could mean that new forms of transgenic papaya would be allowed. Other outdoor modified crops, such as banana and pineapple, would be prohibited.

During the panel discussion, farmer and state Board of Agriculture member Richard Ha criticized the law for, as he sees it, putting Big Island farmers at a disadvantage.

“We need to look at the big picture,” he said. “Right now we’re not looking at the big picture.”

While supporters of genetic engineering say crops approved for release are proven safe, there are still concerns over the spread of modified genes, especially among those who don’t think enough research is done.

Without visual differences between modified and non-modified crops, critics say it’s difficult to tell which plants have altered or added genes and those that are more natural.

Rachel Laderman found that out the hard way.

The Hakalau resident said she was surprised to find out after attending a workshop in February that some of the 40 papaya trees she was growing on her property were genetically modified, especially since there were no papaya farms nearby to cause cross-pollination.

At the workshop, UH scientists were offering to test for the virus-resistant genes in leaves attendees brought with them.

Laderman said she brought 16 samples; two had the modified gene.

She said she collected the papaya seeds from a seed exchange and from papaya she bought at a natural food store.

“I was very surprised because I felt that we were careful about where we were growing,” she said. “I didn’t intend to grow anything other than organic food.”

Richard Manshardt, a horticulturalist with UH-Manoa, was at the workshop.

He said university scientists were there to talk about how to prevent cross-pollination between transgenic and non-transgenic papaya.
That can be done, Manshardt said, by bagging trees during flowering periods.

It’s also important for organic growers to get seeds from a trusted non-transgenic source, he said.

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