

TO: Representative Clift Tsuji, Co-Chair
House Agriculture Committee

FROM: Penny Levin
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DATE: 19 February 2008

RE: SB958 10-Year MORATORIUM ON GENETIC MODIFICATION OF TARO

This testimony is lodged as late testimony as a direct result of the blatantly biased manner in which the hearing of SB958 was conducted. Approximately 90 percent of those who came to testify in support of the bill were asked to “summarize” and to cut it short – some of us in less than three minutes. Between 9am and 7pm, there were less than five people who were told to do the same on the opposite side of this bill – and there were many from the university and the biotech industry who talked at length (the video record will show this).

This late testimony was intended to be my oral testimony during the hearing specifically to provide new information in response to misinformation put forth by the opposition to this bill, and to pose important questions that legislators should be asking. What follows is that testimony which was not allowed to be heard.

Aloha mai Chair Tsuji, Committee members;

My name is Penny Levin. I am the executive director of E kūpaku ka ‘aina – The Hawaii Land Restoration Institute, a member of 'Onipa'a Na Hui Kalo. I have grown kalo for 20 years and currently grow in Ke'anae, Maui. I have also spent 30 years working in biodiversity conservation at the international policy and local implementation level and so I bring some level of expertise to this issue. I am testifying solely as an individual and taro farmer today. I strongly urge you to pass SB958.

Two days ago, I watched a video that all of you may remember or maybe you were even part of back then. It was a film of George Helm and Kahoolawe Aloha Aina.

I was reminded that for all of the protests, law suits, activism and education that were part of that fight – that the heart of George’s message was constant. It was about aloha for this aina called Kahoolawe; that this land was a source of life itself.

Haloa, the kalo is also the pu'uwai, the heart, the breath – the source that springs forth from the waters of Kane and gives us food – that also gives us life.

So, I testify with aloha to you Committee members, because you are being asked to know and understand what taro farmers know, without having spent a lifetime in the lo'i.

In the 1970s, George Helm, Walter Ritte and so many others stood before the legislature in hearing after hearing to speak the truth and reveal the myths when the military claimed that "they needed to bomb this land for everyone's safety" in the same way that taro farmers and Hawaiians stand before you today when the University of Hawaii and its researchers claim that they need to be allowed to continue this gmo taro research to maintain "researcher rights and freedoms" and because it is *they* who will "save the taro" for us.

Where is the truth?

My written testimony speaks directly to the value and importance of making Hawaii a protected zone for taro, and I do not need to reiterate it here.

I wish to point out that the "open communication" so readily claimed by Dean Hashimoto was with what has become known as "the false order of Kamehameha". It is an organization paid by the University of Hawaii to advise it on Hawaiian issues. You will find in the stack of 6,000 testimonies, a letter from the true Royal Order confirming this. CTAHR did not openly communicate with Onipa'a Na Hui Kalo. In fact we did not become aware of the existence of a GMO taro until late 2004, by which time the plant had already been modified. We invited Dr. Miyaska and Dr. John Cho to talk with our organization. At that time, she stated "if taro farmers don't want this we will end it." She also told us the project was wrapping up. It is now three years later and they are still wrapping it up. In 2005, we asked her for one specific thing – an end-of-project protocol for accounting for and destroying the plants in order to prevent inadvertent contamination. She promised us the document; it has never materialized.

The University, HARC and its researchers have claimed they are only trying to produce a disease resistant taro plant, and side-stepping the details of the end product. If there is any doubt that USDA, UH CTAHR, PBARC, HARC and its researchers (all co-owners in the gmo taro) intend to create a taro that will produce viable seed; one only need look as far as the HARC 2003 Annual Report, which states on pg.27 Par.2:

"HARC, UH and USDA are collaborating to develop a taro transformation system. The specific objectives are: a) to develop a regeneration system for transformed [transgenic] taro to produce fertile plants".

What does that mean for taro? The seed can be readily manipulated and patented.

Taro, by itself, flowers frequently and produces fertile seeds *infrequently*. Solid documentation exists on this in the records of the Bishop Museum from the late 1800s. I have observed taro all over the islands flowering. In my own patches, the kalo flowers profusely every year.

Earlier, you heard Dr. Miyasaka testify that flowers rarely happen and that there were male and female. The Manual of Flowering Plants of Hawaii – the bible for botanists in the state provides clear documentation to the contrary regarding the composition of the flower. It is both male and female within a single flower.

I have major concerns as a taro farmer over how little it appears Dr. Miyasaka and others know about this plant and yet have no hesitation in genetically altering.

If you could put taro seeds in your pocket and sow them like rice in a field – the intimate relationship that Hawaiians have with kalo would not have evolved to the where it did.

Pollination by hand is the very thing that allowed Hawaiians to create so many unique cultivars specific to each condition they found in the islands. They didn't need to worry that the kalo that preferred the warm, slow water would wild-cross with the kalo designed for the cold uplands, so that neither would thrive. Each variety kept to its own character. A taro farmer depends on that.

Gerrit Wilder, a botanist at the Bishop Museum showed beyond a shadow of a doubt that this method was highly effective. In 1935, just before his death, he wrote:

“From close observation of the specimens in my collection, I became convinced that by means of hand cross-pollination, fertile seeds could be developed. This I proceeded to do, and with results eminently successful ...”

Now this may appear inefficient or slow to modern crop scientists – *only* if you don't understand the kalo or the science behind the planting methods.

Farmers don't want a plant that seeds and sprouts new plants everywhere – here and there between the other plants, between rows, on the banks. They know that the spacing of the plants makes a difference in the size of the corms at harvest. If they are crowded, you have less fruit for your labor. If taro consistently produced fertile seeds on its own, every time you tilled a patch, the seeds would spring up and disrupt the field. In the dryland mala, the taro would go feral. The seeds would spread by birds and animals. **Taro with a consistently fertile seed would become an invasive species.**

I am sure, the Invasive Species Committees on each island would not appreciate a new plant added to their list of species to watch out for and the problems it would pose.

Are taro farmers scientists? More than twelve hundred years of observation and work with this plant is undeniable. It is insulting that UH researchers, HARC and HCIA staff have testified for hours today suggesting we are ignorant of our own crop, what ails it, what is best for it and of the risks inherent in genetically altering this perfect food.

Let us allow Dr. E.S. Craighill Handy, a scientist at the Bishop Museum, to describe the knowledge of the Hawaiian planters (1972; pg 21);

“there is ample evidence to the amount and character of practical knowledge that the old planters embraced and utilized in their horticulture...The accuracy of systematic differentiation, identification, and naming, which is characteristic of all real planters even today, evidences powers of observation and classification of the first order. The experienced planters’ knowledge of the anatomy of their plants, of their habits and requirements, evokes the admiration of expert agriculturalists of more complicated cultures whose intimate knowledge of plants rarely exceeds that of these tropical gardeners...A vast amount of stored experience and natural originality and observation lay back of all the Hawaiian planters’ science.”

Handy was a scientist who was not afraid of culture and taro farmers where his greatest source of information. Today, apparently we are second class citizens and researchers are god.

Taro farmers have said that biotechnology is neither all bad or all good; however, there are huge questions and mounting scientific evidence about its safety and its stability. A researcher true to science would not be afraid to investigate this or to question his own work in light of that information. A researcher beholdng to the biotech industry would not look farther than the hand that feeds them.

Genetic engineering is not the answer for what ails the kalo. We were disappointed to see legislation calling for increased border protection not given greater attention in this year’s legislature. And even more disappointed to hear the same old statistics paraded out regarding the “decline of taro” since the 1940s. From 1940 through the 1970s farmers lost their lands and it was a period that farmers were ashamed to have their sons and daughters work as taro farmers. So was the decline due to disease? Or were there just fewer farms/farmers producing?

Biotechnology – molecular biology, genetic engineering – what ever name it uses, has been heralded as if it were the new space program. People spin dreams and enterprises around the potential discoveries, patents and royalties that might be made from this. We send our children down the shining halls of science and technology looking for a future career without ever asking what will safeguard home when they turn around and long for where they have come from.

You have heard today claims of “researcher/university rights” and “researcher freedoms”. What of taro farmer rights or Haloa’s rights? Great freedom also brings great responsibility. Rights without ethics is like a spoiled child let loose on the community. Researcher freedom under the umbrella of the university shields its members from having to be responsible for outcomes of their pursuits. In the case of invasive species – there is a long list of “escapes” from bad recommendations in agriculture from UH CTAHR (Kudzu, koa haole, tilapia to name a few). Just this last year, they developed a program to promote niche markets for Surinam Cherry – a known invasive using a “pest-for-profit” approach we know, by way of the apple snail, doesn’t work. UH has never been held accountable for such spurious recommendations and introductions. And there are many.

If UH has the right – then it also must hold the liability – when contamination occurs and clean up is required, when taro farmers and poi millers lose their markets and go out of business; when a consumer has an allergic reaction; when we disenfranchise even further Hawaiians from their heritage.

I hope that the Committee is willing to trust those who know this plant best - taro farmers and native Hawaiians - when we say that this moratorium is absolutely necessary. Had the university listened to the knowledge of taro farmers, the need for SB958 would never have happened. Had the researchers also been taro farmers, they would have been avidly looking for a solution to the apple snail!

Instead, I find myself here week after week since the opening of the legislature, using money out of my own pocket to beg for support for apple snail research funds and the taro purity and security task force – why? In 20 years, not a single researcher at UH has offered to take on the apple snail. But biotech is another ball game – because there is money involved.

Allow me to pose a final question: At what point is the economic chariot and the supposed neutrality of science that is driving this issue pell-mell with all of us in it towards the pali, asked to stop; to pull over and consider where it is headed? This is what the moratorium will allow us to do.

If we lose one of the critical things which identifies this place and her people as Hawaii and Hawaiian is that an acceptable trade-off? Where do we draw the line that says - it is this that is who we are. Not a cornfield in Illinois, not a lettuce field or a laboratory in California. We are Hawaii.

I strongly urge the legislature to support SB958. Mahalo for this opportunity to testify.
Penny Levin

March 2, 2008

Honorable Clifton Tsuji, Chair Agricultural Committee

Subject: SB-958, Relating to Genetic Modification of Kalo.

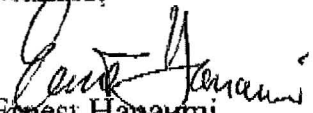
I support the legislation regarding the genetic modification of kalo in Hawaii. I have plenty aloha for the Hawaii kalo farmers. But they cannot possibly survive in the industry over time based on the low production, time constraints, and the cost of land and labor. Perhaps, a modified kalo will save the industry and support na keiki farmers from the current hardship and sustain them in a challenged agricultural enterprise.

For individuals who wish to continue growing the unmodified kalo, they can maintain the "purity" of their crop by planting the huli from their loi. Thus, the new harvest would be identical to the mother plant; not genetically modified. The process is similar to grafting a mango tree. The grafted plant would be identical to the mother plant and not be affected by any genetic changes that invariably affects the seed.

I read in Barron's that Monsanto (MON) has been successful in boosting the foreign agricultural annual production from two, three or even four times over the prior years. Certainly, any increase in the kalo production would be a blessing for the farmers and consumers as well as the individuals who disagree with SB 958.

We who grew up in Kalaoa-Papaikou are proud to read and hear about your good work. Keep running the 880 and don't forget to smile.

Mahalo,


Ernest Hanaumi
Individual Citizen in Aiea