

Researchers take hibiscus efforts to commercialization

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Commercialization of winter-hardy hibiscuses from the Texas AgriLife Research program at Vernon could become a reality within the next year, according to Dr. Dariusz Malinowski, Texas AgriLife Research plant physiologist and forage agronomist in Vernon.

The hibiscus flower project got its early start about six years ago as a hobby at the homes of Malinowski, his coworker Dr. William Pinchak, AgriLife Research animal nutritionist, and Steve Brown, Texas Foundation Seed Service program director.

But the commercialization effort began when it was added to the Vernon research program's strategic plan covering non-traditional or under-utilized crops that have value because of [drought tolerance](#).

"Three years ago we decided to go large scale and evaluate many more breeding lines than we could do in our backyards," Malinowski said. "Right now there are about 6,000 plants growing in our plots, different crosses, from which about less than 100 have a commercial value."

The team, which also includes Dr. Yves Emendack, post-doctorate research associate, and Shane Martin, technician, has nurtured the 6,000 plants through the dry spells and high heat, Malinowski said.

They [plant seeds](#) from selected breeding plants in search of new types of flowers, leaf shape, leaf color, flower color or combination of colors, he said. Most of their new hibiscus lines are interspecific hybrids among

several winter-hardy hibiscus species.

And they are reaching their goals, one by one.

"One of the main goals of the program is to create a blue-flowering winter-hardy hibiscus," he said. "We succeeded in 2010 to have a plant for the first time with flowers with bluish tint. Unfortunately, the bluish tint was visible only in the shade or on overcast days. In full sun, it was still purplish."

A true blue flower pigment does not exist in the winter-hardy hibiscus species, but through crossing breeding lines with purple and lavender flower color, the breeders have selected new hibiscus lines with almost-blue flowers, Malinowski said.

"We've been working ever since on stabilizing the blue color and this year, we have one plant that has very nice blue flowers in full sun and in shade, it doesn't matter," he said. "Also, this year's blue flowers are much bigger than the parental plants."

Malinowski added that the blue flower color seemed to be very much correlated with the small flower size of one of the ancestors of the blue hibiscus.

He said their goal is to create a blue-flowering hibiscus with a very large, 12-inch diameter flower, "which will probably take another few years, but we are on the way to doing that. This year we have several lines with large flowers, but not quite blue yet. Through back-crossing with the most blue-colored lines, we expect to increase the intensity of blue color in the large flowering hybrids."

Another goal is to create plants with different colors of foliage, Malinowski said.

"We now have one line with maroon leaves, very nice purplish-maroon. This trait can be inherited later on in the breeding program and we will work toward breeding plants with different flower colors and the maroon leaves."

"Such winter-hardy hibiscus types do not exist on the market today," Malinowski said, adding that is what his breeding program is all about – trying to provide consumers with something different that survives colder winters and drier conditions.

The hibiscus can basically be grown from South Central Texas to Canada, as long as the required winter period is long enough for them to go dormant after the first frost, Malinowski said. The plants re-sprout from the root the following spring.

One more accomplishment Malinowski is claiming this year is success in trying to change the traits of the eye of the hibiscus.

"Usually [hibiscus](#) flowers have a dark red or maroon or brown center eye, but rarely do they have a white eye. In 2009, we found a plant with large soft-pink flowers and a white eye. We have been trying to transfer the trait of the white eye with the red-flowering types and this year we were successful."

Malinowski said through the project, they have disclosed about 80 breeding lines to the Texas A&M University System Office of Technology Commercialization.

Brown said there are several companies evaluating different materials across the U.S. and in Europe at this time.

"Once these companies decide they wish to include these lines in their product offering, they will license the products, and propagate to begin

to increase their numbers," he said.

"In the ornamental crops business, most commercial nurseries will show their customers a sampling of what will be available for the next season," Brown said. "This is an effort to both promote the product and get an idea of how many plants they need to produce for the upcoming season."

This process, once a nursery makes the decision to add a new product, takes about two years before the consumer will see the product in the garden centers in great numbers over a diverse area, he said.

Provided by Texas A&M AgriLife Communications

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