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Kultevat continues work on Russian dandelion

Russian dandelions grow in a field.

CARLSBAD, Calif.—Kultevat L.L.C. appears to be ready to spread its wings after almost five years of building its operation.

Founded by entrepreneur Daniel R. Swiger, the company is moving rapidly toward its primary goal of full-scale production of rubber and sugar syrup from Russian dandelion plants (Taraxacum kok-saghyz or TKS) in the U.S. and abroad by 2016.

"Currently we are producing small amounts of rubber with larger acres of TKS going in the ground in fall 2013," he said. "TKS is an annual crop, so we can plant, grow and process in one year versus two years for guayule and seven years for hevea."

The firm is growing the plants in 12 states and searching for other acreage in Canada and Mexico.

Kultevat's most recent developments include:

• On April 5, the company entered into an agreement with KeyGene N.V., a Netherlands biotech company, to collaborate on the production of rubber from the Russian dandelion. Under the pact, the firms will invest in the development and commercial introduction of new dandelion varieties that are enriched for latex in their roots and are suitable for large scale production of natural rubber.

• In late January, the firm named prominent scientist Roger Beachy its chief scientific officer.

• More recently, Swiger said the company will move to new headquarters at the Helix Center in St. Louis from its present facility in Carlsbad in June.

• Beachy will set up an analytical laboratory with a small staff of scientists and technicians at the St. Louis site. The company plans to hire 35 to 45 engineers, scientists, office and field management personnel, and others within the next two years, Swiger said.

• The firm is in the midst of raising about $5 million from individual investors "and will be fully subscribed by May," he said. It plans another fund-raising drive in the future.

"Kultevat is working with other potential partners in all aspects of our business," Swiger said. "We are under strict confidentiality agreements and are not at liberty to discuss them at this time."

Feasible business

Swiger, president and CEO of the firm, began setting up Carlsbad-based Kultevat in 2008. It became a California corporation in 2010.

It is not a project, he stressed. "We are not academia consulting with all the names in the tire industry or a research center.

"We are a business" in the rubber industry. "We are not here to explore and validate TKS. We are beyond that point. It is an economically feasible business with a tremendous value proposition."

Swiger said Kultevat has a management team in place that includes Beachy and Tony Nocera, a former vice president of manufacturing for Yulex Corp., who holds the same position at Kultevat. The company has raised some funds and has three patents with more to come.

In addition, he said, the firm has "seed production, rubber production, field trials, collaborations, strategic partners, and now we are ready for scale up and customers."

Under its pact with KeyGene, the two firms will invest in the development and commercial introduction of new dandelion varieties enriched for latex in their roots that are suitable for large scale production of natural rubber.

Wageningen, Netherlands-based KeyGene will be responsible for developing new varieties of dandelions by using state-of-the-art molecular breeding techniques, while Kultevat will focus on appropriate production practices and large scale latex extraction and rubber production in North America.

KeyGene will use newly developed varieties and its rubber production technologies for production of rubber in other locations across the globe.

"Kultevat will apply its knowledge of commercializing alternative rubber crops, biotechnology, rapid variety improvement process economics and feedstock to maximally valorizing co-products," according to Swiger, founder and former chief operating officer of Yulex, a Phoenix-based company involved with the production of latex from the desert plant guayule. He left Yulex in 2005.

"We have been working (on the) Russian dandelion since 2008," he said. "With our extensive network in agriculture, greenhouse, seed propagation and commercial rubber sales, KeyGene is an ideal global partner for Kultevat because they are the leaders in plant breeding, research, partnerships and molecular genetics. This will improve on our ability to rapidly scale and commercialize."

Strong credentials

Adding Beachy, who has a doctorate in plant pathology from Michigan State University, as Kultevat's chief scientific officer is another major plus for the firm, Swiger said. Initially, he joined the company as a member of its scientific advisory board.

He is the former president of the Donald Danforth Plant Science Center in St. Louis, and in 2009 he was appointed by President Obama as the first director of the National Institute of Food and Agriculture, a position he held until 2011 when he stepped down to continue plant research in St. Louis.

A 2001 recipient of the prestigious Wolf Prize in Agriculture, Beachy also served as chief scientist at the U.S. Department of Agriculture from January through October in 2010.

He is a member of the U.S. National Academy of Sciences and a fellow of the American Association for the Advancement of Science, the American Academy of Microbiology and the Academy of Science of St. Louis. In 1986, he and colleagues developed the first genetically modified food crop, a tomato modified for resistance to disease.

Beachy is planning to hire a small team of scientists and technicians initially to launch Kultevat's research and development activities at the company's new headquarters, which will be located in the Helix Center Incubator, an operation that has close ties with the Danforth center.

A non-profit research institute, the Danforth center is engaged in research that strives to enhance the nutritional content of plants, increase agricultural production to create a sustainable food supply, cut the use of pesticides and fertilizer, develop new and sustainable biofuels and generate scientific ideas and technologies.

The center will help Kultevat reach its cost goals and rapidly help build its agriculture program to meet the needs of manufacturers in the tire, consumer and health care sectors, according to Swiger.

He said the Russian dandelion, which was cultivated in 42 states in the U.S. and in the Soviet Union during World War II as an emergency rubber source, "can be grown faster, over a broader range, and be improved more quickly than any other tuber-bearing crop. Moreover, it can be processed more efficiently, with less capital and with higher-value co-producers than any other crop."

The dandelion projects were discontinued after the war.