

# Improved-yield dandelions prepped for tire production

February 19 2013, by Nancy Owano

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(Phys.org)—With supply falling short of demand for natural rubber, scientists in The Netherlands are literally planting seeds of hope for a viable solution. Researchers at the Dutch biotech firm KeyGene are engaged in developing the dandelion into a promising source of rubber. The dandelion's roots contain latex, the milky liquid that is a source for natural rubber. The latex from dandelion roots could serve as a needed source of material for tires.

Efforts to develop alternative sources of [natural rubber](#) are due to marketplace conditions where demand exceeds supply. According to

estimates, demand worldwide for rubber will outstrip supply by 20 per cent in 2020. The problem is that, according to tire manufacturers, Apollo Vredestein, it is not possible to simply replace natural rubber extracted from the rubber tree with a synthetic variant.

To reduce dependence on the rubber tree, alternatives are sought. At KeyGene's special greenhouse environment, experiments are carried out in developing the dandelion to the point where it can become a rubber-source crop. This takes work. Because the dandelion's roots are smaller than ideal for commercial rubber production, KeyGene scientists have subjected the plant to its phenotyping process. The team hopes to achieve a more useful variety with a fatter root and higher yield, to better meet the demands of industrial processing.

According to reports, Apollo Vredestein has joined KeyGene in a collaborative dandelion development effort. A prototype tire has already been produced. "Although first impressions look very promising," according to a company statement, "the tires with the alternative natural rubbers will first undergo extensive testing over the coming months before being taken into production."

KeyGene, which describes itself as a molecular genetics R&D company, uses an approach that analyzes specimens of a given crop, scanning for mutations that will be beneficial in terms of yield or sustainability. The genetic material of strains with desirable characteristics is isolated and sequenced to create improved crops. As for the dandelion, in aiming for crop potential, the tinkering has involved "making crosses between" the Russian dandelion with the common dandelion, using DNA profiling technologies.

KeyGene emphasizes that its method represents a quicker and more economical way of crop improvement than genetic modification.

The company's CEO, Arjen Van Tunen, said, "We don't introduce a gene from a different species into our crops." He pointed out that the company works "without crossing the species barriers." The team works with the DNA in the species itself.

Beyond KeyGene, the dandelion continues to be of interest for industrial use. The EU-PEARLS in Europe is a joint project between European research organizations and industrial partners. Its interest similarly is in the Russian dandelion as well as the desert plant, guayule. Another sign of dandelion interest was noted last year, when Bridgestone Americas said it would continue to test the dandelion at its lab facilities and would engage in larger-scale testing in 2014.

**More information:** [www.eu-pearls.eu/UK/](http://www.eu-pearls.eu/UK/)

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Citation: Improved-yield dandelions prepped for tire production (2013, February 19) retrieved 29 April 2024 from

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