

Rubber from Russian dandelions—a serious European alternative to rubber tree plantations

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Credit: Wageningen University

Natural rubber is an indispensable ingredient in tens of thousands of applications, from car and aircraft tyres to medical equipment. Nearly all this rubber currently has its origins in rubber tree plantations in Asia. In the European DRIVE4EU project, Wageningen UR is working with international companies and research institutes to develop a European

alternative: natural rubber from the Russian dandelion.

Ingrid van der Meer from Wageningen UR is coordinator of DRIVE4EU (Dandelion Rubber and Inulin Valorization and Exploitation for Europe). She underlines the importance of a fully-fledged alternative to *Hevea brasiliensis*, the official name of the rubber tree. "At this time the world is totally reliant on Southeast Asia. In South America, where the first plantations were located, large-scale cultivation has become impossible due to a fungal disease. If the disease should spread to Asia the production of natural rubber would come to a halt. There needs to be an alternative."

Successful European production chain

Although natural rubber is found in at least 2,500 plant varieties, most of these are unsuitable for the large-scale production of good quality rubber. A previous project, EU-PEARLS, showed that the Russian dandelion, or *Taraxacum koksaghyz*, is a viable option. DRIVE4EU is now focused on the development of a successful production chain in Europe. And it is going well, according to Van der Meer: "We have made considerable progress across all links of the chain."



Taraxacum koksaghyz. Credit: Wageningen University

Major steps in breeding and agronomy

Breeding is one of the links in which considerable progress has been made. A complicating factor was that the material in the gene banks had

become polluted over the decades. Van der Meer: "In the first EU project our scientists had to ride mules to the plains of Kazakhstan to find the right variety, which demanded a great deal of botanical knowledge. We have now made major progress in selecting the right lines in the offspring via molecular techniques. But we have also come a long way in the agronomical field. As of a year ago, we no longer have to harvest by hand and we are working hard on developing machinery for large-scale extraction."

Breakthrough in five to 10 years

Production currently takes place at a modest scale. Some two hectares have been sown on test fields in the Dutch province of Zeeland and in Belgium. After the next harvest the goal is to expand to six hectares. "We need more biomass to build a test plant. Companies want more material quickly as they see major opportunities for European natural rubber." Van der Meer expects a breakthrough in five to ten years. "It strongly depends on the rubber price, which is currently very low. But if the cultivation in Asia were to be struck by disease then the demand for European natural rubber would increase exponentially."

The quality of the rubber from Russian dandelions will not be a problem says Van der Meer: "It is comparable to the quality of traditional [natural rubber](#). For some applications, such as having a good grip on wet surfaces, dandelion rubber even appears to perform better."

Provided by Wageningen University

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