

First tyres using natural rubber produced in Europe

The first tyre prototypes obtained from natural latex from Guayule and Russian Dandelion plants have been presented. The production of the first prototypes is a clear indication of the technical performance and economic potential of the rubber extracted. Following the cultivation of Guayule and Dandelion plants and the extraction of latex from them, the Dutch tyre company Apollo Vredestein, a partner in the EU-PEARLS European project, has this week produced the first prototypes of tyres manufactured using natural rubber produced in Europe. The prototypes will undergo exhaustive tests over the coming months before steps are taken towards the production phase. This success is opening up new market expectations that in a not-too-distant future will be able to break the Asian rubber monopoly. The EU-PEARLS European project, through which this development has been tackled, began four years ago with aim of seeking alternative sources of latex and rubber for Europe, and thus reduce the commercial dependence on the Asian market for this resource and promote the cultivation of latex-producing plants in the European Union. This project is being funded by the European Commission's 7th Framework Programme and developed by partners from eight different countries, among which is the Neiker-Tecnalia research centre alongside 12 institutions. NEIKER-Tecnalia has been commissioned to research, among other things, the genotyping of the two species earmarked for substituting imported natural latex, and the possibilities of introducing them into Europe: the guayule (*Parthenium argentatum*) shrub and the Russian dandelion plant (*Taraxacum kok-saghyz*). The guayule is regarded as the more promising crop for cultivation in the Mediterranean areas, whereas the Russian dandelion is more suited to the northern and eastern countries of Europe. Some natural latexes are the main ingredient for extracting natural rubber, a raw material that is indispensable for all kinds of industries and essential in the manufacture of surgical gloves, condoms or tyres. All the latex used in Europe is imported and is mainly extracted from the rubber tree *Hevea brasiliensis*. The biggest producers worldwide are Malaysia, Indonesia and Thailand, three Asian countries that virtually hold a world monopoly over this resource. In the absence of synthetic alternatives to natural rubber Natural rubber is a unique biopolymer that cannot be substituted by synthetic alternatives in many of its most important applications, like medical products, condoms, footwear or adhesives. This uniqueness is prompting the European Union to avoid the latent risk that the producing countries may decide to carry out a co-ordinated increase in the price of this raw material, which happened with crude oil in the 1970s. Initial studies have shown that both the Russian dandelion and guayule are a good alternative to the rubber tree. Guayule is already being used to produce biomass on a large scale in Spain, yet the rubber from the Russian dandelion seems to be easier to extract. The research has focussed on optimizing the development of the growth and speed of growth of the Russian dandelion in order to increase its content of natural rubber available for extraction. Apart from the monopoly problem, world production of natural rubber, mainly linked to the *Hevea brasiliensis* rubber tree, is facing a number of threats. The rubber tree is highly vulnerable to pests and diseases and its cultivation is closely

linked to very specific climate conditions which exist mainly in tropical zones of Asia and South America. Preventing latex allergy Another fundamental problem with the rubber from this tree is the latex allergy it can cause and which would be avoided with latex from guayule or Russian dandelion. Another threat is the increase in the demand for natural rubber in the emerging countries. This circumstance is taking place in a world context in which the supply of natural latex is falling and has led to the doubling of the price in the last two years. The results of the research will be presented on 24 and 25 September during the closing conference of the EU-PEARLS European project in Wageningen (Netherlands).