

NATURAL RESIN's VALUE CHAIN: Untapping the tapping activity

Good morning everyone, I would like to start by thanking the organizers of this event for the opportunity to speak in this forum about the potential of natural resin.

Resin, as you all know, is a viscous sticky substance, that some trees expel as defence mechanism to an external aggression. In this case we're talking about pine trees and pine oleoresin, what we generally call natural resin, is used as raw material for the chemical industry, being one branch of the so called pine chemicals. We generally call tapping or tapping activity to the harvesting of natural resin, the operation that a person carries out to collect natural resin from live pine trees. This pine oleoresin is then subject to first industrial transformation and by physical processes you get two main products: gum rosin, the solid part of resin, the sticky part, and gum turpentine, the liquid volatile part. These two products are then further transformed and widely used in the chemical industry.

The other two branches of pine chemicals refer to products obtained by chemical processes from pine stumps and by-products of the paper industry. The main difference between them is precisely the fact that our branch, natural resin, concerns a resource obtained from living trees, living forests, while the other two depend on logging and chemical processes to obtain similar derivatives.

On the other end you can also get comparable synthetic products based on fossil fuels and use them in the same kind of applications as pine chemicals.

But what applications are we referring to? What is natural resin used for? Well, if you look around you right now, starting with the computer you are using, the adhesive of the label on the water bottle you're about to drink from, the printing ink you used to print today's event program, the chewing gum that you're chewing to calm your nerves before this presentation, or the scent that you used to parfum yourself early this morning, all of them may have natural resin in it. And you can find it in many more products of your daily life and probably don't even imagine it comes from natural resin. The applications are countless.

Natural resin is harvested all around the world. The tapping techniques are different from country to country, from region to region. The tools and the stimulants used are different, the industrial transformation processes are different and, of course, each pine species provides a unique special type of pine oleoresin with singular chemical properties. Brazilian's *elliottii* gum rosin is much appreciated because it doesn't crystallize, Portuguese pinea turpentine is rich in limonene, Chinese *massoniana* gum rosin is known by its versatility and Spanish pinaster turpentine has particular rotatory properties, just to give you a few examples.

So within this diversity and this richness, there is always room for innovation, for a new application, for a new technique, for further improvement and continuous development and all these are essential to guarantee natural resin's sustainability.

Speaking about sustainability, the relevance of natural resin within the three pillars of sustainable development, people, planet and profit, seems rather obvious but should be reminded anyway: natural resin is a renewable natural product, harvested with respectful techniques, promoting correct forest management and allowing multipurpose forest uses and biodiversity. Tapping activity is held by tapping workers and so it depends entirely on labour, it depends on people. It promotes the setting of people in rural areas, providing a secure income for many families, it is inclusive, it contributes to the forest's management, it helps in fire and plague prevention, in environmental conservation and territorial cohesion. Natural resin is raw material for many products of our daily use and must be recognized and valued for its contribution to society, environment and economy.

A couple of weeks ago, I received a message from a colleague here present with a link to an article from a local newspaper, about some surprising findings during an archaeological excavation in a pre-historical site. One of these findings referred to a ceramic pot that contained pitch, which is basically heated or burnt natural resin, a kind of rough gum rosin. This archaeological site is located within one of the most important tapping areas in the centre of Spain, in the heart of *Castilla y León*, in the surroundings of what we call *un pueblo resinero*, a tapping village, and just about 8 km from the industrial plant where my company operates today. The conclusions, as mentioned in this article, were that the landscape at that time was not so different from the landscape today; that the land uses by then were similar to now-a-days' land uses; that within this settlement, about 3.200 years ago, during Bronze Age, we could already find tapping activity and tapping workers, and that these people already knew about natural resin's properties.

It is known that the use of natural resin is previous to historical registers. There are records from Egypt and Ancient Greece but to find such solid evidence from the pre-historical age right next door is absolutely overwhelming.

And I ask myself is there a better way to show natural resin's potential than to acknowledge that it is part of the European Cultural Landscape and Traditional Land Use since pre-historical times till today?

Natural Resin has always been a part of Europe's green economy and it will still be in the future. For sure.

Thank you for your attention.

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