
The circular economy of the prickly pear

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Italy is the world's third largest producer of prickly pears. A Sicilian start-up has grasped the economic value of the entire plant and its multiple uses, not only for the food sector. The new markets, nutraceutical and cosmetic, can offer diversification and an income opportunity for farmers

By DANIELA SCIARRA

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Italy is the world's third largest producer of prickly pears and the first in Europe. After Mexico and the United States, 85% of domestic production is concentrated in Sicily where, between the provinces of Catania and Caltanissetta, is the heart of production with the district of San Cono. Here, until recently, from the 2,500 hectares of prickly pear plantations, only the fruit was collected and all the rest of the plant, the so-called blades or cladodes, was left on the ground becoming residues of pruning and biomass.

Only recently, after years of experimentation and research with growers, a start-up from Licata (Agrigento), Bioinagro, has turned the paradigm upside up.

Not just the fruit (the prickly pear). For the Sicilian company, pruning residues are a high value-added resource to be distributed along the supply chain. He made three product lines: the whole juice of cladodes (or shovels), the concentrated or dry extract of fiber, and the concentrated or dry extract of mucilage. These three lines are in fact semi-finished products that Bioinagro confers on specialized companies in nutraceuticals and, in perspective, in cosmetics. Phytotherapy has discovered its importance in the treatment of overweight and obesity and in maintaining adequate levels of cholesterol and triglycerides.

The district of San Cono as a whole today is already able to offer an estimated biomass availability of around 30,000 tons per year. The income deriving from the sale of the fruit alone is estimated at around 8-10,000 euros/hectare, the enhancement of the shovels today brings an additional revenue of 5-6,000 euros/hectare. So it is an income supplement for farmers and a growing local economy thanks to supply chain agreements.

According to the owners of the start-up, the shovels (cladodes) will become the main product of the plantation, attributing to Sicily a leading role in this market that is taking its way. Mexico would have enormous production potential compared to Italy, but the use of the plant was limited to the food sector and bioenergy production, from biogas to bioethanol. Bioinagro, on the other hand, aims at diversification and relies on two factors: innovation in close contact with growers for the development of harvesting and post-harvest technologies (starting from drying), so as to reduce logistics costs and leave more income margins for agriculture; the guarantee to farms through different sources of income and greater flexibility compared to market trends.

In this sense, it is possible that the relationship between the main product (Indian fig) and the by-product may even reverse over time.