

THE BIOACTIVE COMPOUNDS POTENTIAL OF GRAPE WASTE

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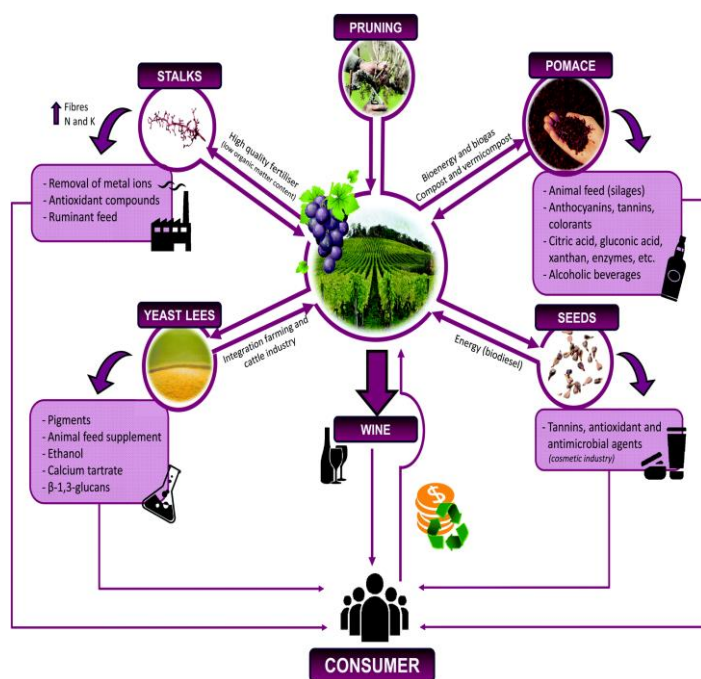
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Fruit and vegetable losses and waste do not represent only the wasting of food commodities, but also indirectly include wasting of critical resources such as land, water, fertilizers, chemicals, energy, and labor. These immense quantities of lost and wasted food commodities also contribute to immense environmental problems as they decompose in landfills and emit harmful greenhouse gases and other products.

The views about the beneficial effects of wine (and indirectly grape pomace) were introduced in the 1990s due to the theorized “French paradox”. It was believed that the high consumption of red wine in France reduced the prevalence of coronary heart disease (CHD) even though diets contained large amounts of saturated fats. Later studies believed this “paradox” to be due to the phenolic compound, resveratrol found in red wine. Phenolic compounds have been proven to inhibit LDL (low-density lipoproteins) oxidation and reduce the risk of CHD.

With increasing consumer demand for the use of less synthetic compounds and more natural/organic compounds, the utilization of waste/by-products (natural compounds) for alternative uses has been a focus of research.



Grape marc accounts for approximately 15-30% of the mass of grapes crushed and contains unfermented sugars, alcohol, polyphenols, tannins, pigments, and other valuable products. Being a natural plant product rich in lignocellulosic compounds, grape marc is also a promising feedstock for renewable energy production. However, despite grape marc having such potential, advanced technologies to exploit this have not been widely adopted in wineries and allied industries. As research determined the beneficial advantages of wine industry, the once ignored by-product then came to be considered a functional food which is now produced and marketed as a supplement.

Keywords: environmental problems, functional food and renewable energy production.

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