Cleaning system for vineyard pruning valorisation

The main constraint to use the vineyard pruning for energy purposes is the high ash content (around 20 %), which is highly dependent of the equipment performing the pruning and collecting since during these operations a high percentage of impurities such as sandstones, metals, stones, plastics are incorporated. The equipment developed by ATHISA (patent ES2606774) allows to reduce the ash content up to 3 %. It is therefore an equipment that would allow vineyard cooperatives and wineries to use pruning for energy purposes but also agricultural services companies and biomass supplier could benefit from it.

Input material fed into the system has been collected by dragging from the field, left on top of the soil to dry and then shredded to an ideal size of 20cm (or less), and a density allowing buoyancy. In general basis low moisture content is sought (25-30 %).

The equipment is able to process 50,000 tonnes of raw vineyard pruning with an average yield of 14 t/h, obtaining 40,000 tonnes of vineyard pruning with a heating value around 19.12 GJ/t and ash content lower than 3 %. The vineyard pruning can be used as industrial pellet (10 mm) or baled chip in thermal and electricity companies located at significant distances (even to export) and bulk chips for the thermal and electricity companies located in the surrounding area.

The investment required ranges from 300,000-500,000 € (depending on if the advanced or basic model is chosen). Operational costs are around 3€/t of internal costs in case of investment on the equipment and around 5-10€/tin case of biomass cleaning performance service.

KEY WORDS

Biomass cleaning, impurities, valorisation, vineyard pruning

COUNTRY/REGION

Spain

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ADDITIONAL INFORMATION

The equipment operation is based on a density in wet conditions separation process in two phases using as input the vineyard pruning chipped. It is a cleaning and washing continuous process consisting of two units in-line. The high-density separation and decanting unit is equipped with a water filtration system, as well as a tilting system to discharge impurities. Furthermore, the sandstone and soil cleaning system, is a rinsing system equipped with a membrane filter.

The payback time of the investment can be reached within the first year in the case of large biomass supplier managing around 30,000 t/year or more. In the case of companies managing around 10,000t/year payback time should be around 3 years.

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ABOUT BRANCHES

BRANCHES is a H2020 "Coordination Support Action" project, that brings together 12 partners from 5 different countries.The overall objective of **BRANCHES** is to foster knowledge transfer and innovation in rural areas (agriculture and forestry), enhancing the viability and competitiveness of biomass supply chainsand promoting innovative technologies, rural bioeconomy solutions and sustainable agricultural and forest management.

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THE PARTNERSHIP