

VALORIZATION OF GRAPE POMACE BY FERTILIZATION

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Pomace is the by-product of pressing grapes and sweet or fermented musts, the composition includes: bunches, skins, seeds and residues of must or wine not extracted during pressing. The vine annually extracts significant amounts of nutrients from the soil such as 100-150 kg / ha **nitrogen**, 20-50 kg / ha **phosphorus** and 75-250 kg / ha **potassium**, as well as calcium (70-100 kg), magnesium (10 -15 kg), iron (1-2 kg), boron (80-150 g), manganese (80-240 g), copper (60-120 g), zinc (100-120 g), molybdenum (2-3 g), etc. In order to enrich the soil with nutrients, it is proposed to capitalize on grape pomace used as fertilizer by fertilization.

Fertilization with fresh pomace - after harvesting the grapes, the fresh grape pomace is spread in a thin layer 10-15 cm directly on the vine soil. Fresh pomace can also be used to prevent erosion. The reaction of fresh pomace is acidic and can change the reaction of the soil, the one obtained from black grapes can also have a phytotoxic effect, due to the high content of polyphenols. Particular attention will be paid to the conditions in which the pomace will be overturned near the logs in too large quantities, the pomace will heat up strongly and damage the calves.

Fertilization with composted pomace - for composting in piles, a beaten, dry place is chosen in which the pulp is placed on the platform in layers of 20-30 cm, alternating with soil layers 10-15 cm thick. To ensure the oxygen and moisture needed by microorganisms, the layers are loosened. If the material is dry, moisten it with water or manure. Either lime powder (2 kilograms for every 100 kilograms of pomegranate) or 4% Thomas slag is spread over each layer of pomace to neutralize the acid reaction of the pomace. Mineral fertilizers can also be added: 3 kilograms of superphosphate and potassium salt per 100 kilograms of raw pomace. Then moisten with a solution of 1% slaked lime and 2-3% ammonium sulfate. The solution is calculated in a proportion of 15 liters for the same 100 kilograms of raw pomace. Then earth was added. The operation is repeated, by alternately adding layers of pomace and layers of earth, until the platform reaches 1.5 meters high. Arranged on a platform, the compost husk is left to ferment for 20 days.

After this interval, the platform is opened and the layers are vigorously mixed by shoveling. Then the platform rebuilds. These operations are repeated at 30-day intervals. In about 4 months grape marc can be administered as an organic fertilizer in the vineyard. Composted pomace is used in doses of 40 tons (400 kilograms/ar), once every 4-5 years. Composted pomace can be administered in the fall by spreading on the soil surface and will be superficially incorporated. Deep incorporation promotes chlorosis, especially in heavy soils prone to chlorination and compaction.

Environmental regulations:

1. Scattering of pomace is possible only on soil with basic pH;
2. The diffusion of the pomace takes place only on the ground, not in the aquatic environment;
3. Used only in small quantities to prevent erosion;
4. It is used superficially, only in thin layers on the soil surface.

Keywords: *wine waste, spreading, diffusion, fertilizer.*

Acknowledgments. The author would like to thank the Project 2SOFT/1.2/83 Intelligent valorization of agro-food industrial wastes, funded by the European Union, within the program Cross border cooperation Romania - Republic of Moldova 2014-2020.