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Wine waste management and opportunities for new valorisation technologies

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Vine and wine residues management: practices and new routes of valorisation in the French Languedoc Roussillon region

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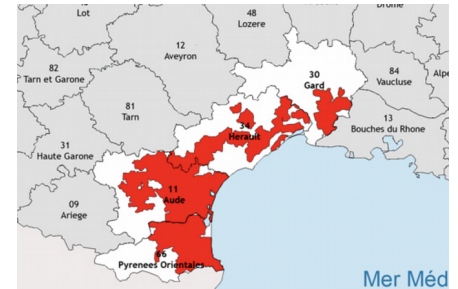
INTRODUCTION

In the vine and wine production sector, huge amounts of waste and by-products are generated each year in France: 1.6 million tons of wood pruning, 850 000 tons of grape marc, 1.5 million hectolitres of wine lees and wastewater.

Since one century, French distilleries valorised the wine by-products.

Since the **French decree n° 2014-903** winemakers are authorized to valorise by themselves their by-products through methanization or spreading.

The Languedoc Roussillon region is the most important French area for the vine and wine industry as regards of volume produced.



RESEARCH OBJECTIVES

This study aims to:

- Provide a clear picture of the current situation as regard the nature of wastes generating by the vine and wine sector and collecting all relevant information to understand why a waste management system is preferred among all the other existing valorization routes
- Evaluate the new technologies acceptance and potential development

METHODOLOGY

Different stakeholders have been interviewed through face-to-face interviews in July and August 2018

Two focuses:

1/ Interviews of 12 winemakers with semi-directive discussion, transcribed and analysed with a thematic analysis

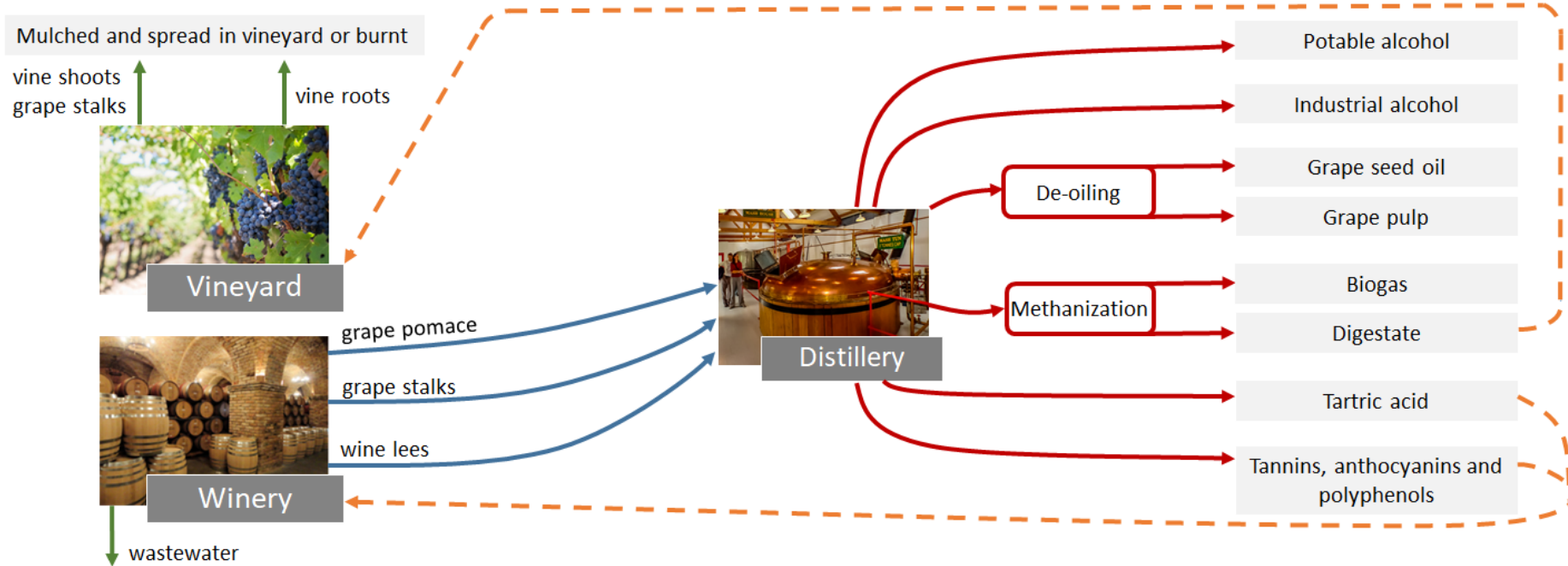
2/ Surveys of 6 winemakers, 2 distilleries and 3 public decision-makers, analysed with NoAWVote



-  Cooperative winery
-  Wine trader
-  Individual winery
-  Decision maker
-  Distillery

Typology and repartition of interviewees in the Languedoc Roussillon

RESULTS



1- Current valorisation routes

Current preferred valorisation routes: **distilleries and fertilization**

Choice criteria ranked by wineries:

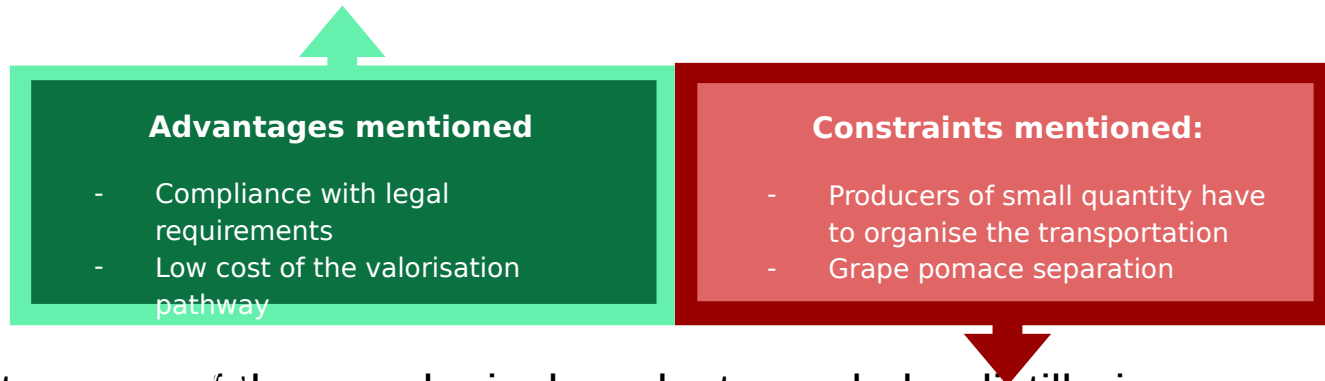
1. Low economic-cost
2. Low environmental impact
3. Ease of use / convenience

For the policy-makers the main criteria is the low environmental impact.

2- Management of wine by-products

Collection logistics of grape pomace and wine lees is organised by distilleries.

Globally satisfied of this long term commercial relationship



Almost no use of the oenological products made by distilleries.

3- Management of wastewater and vine by-products

There is no specific collection and post-treatment proposed to vine growers.

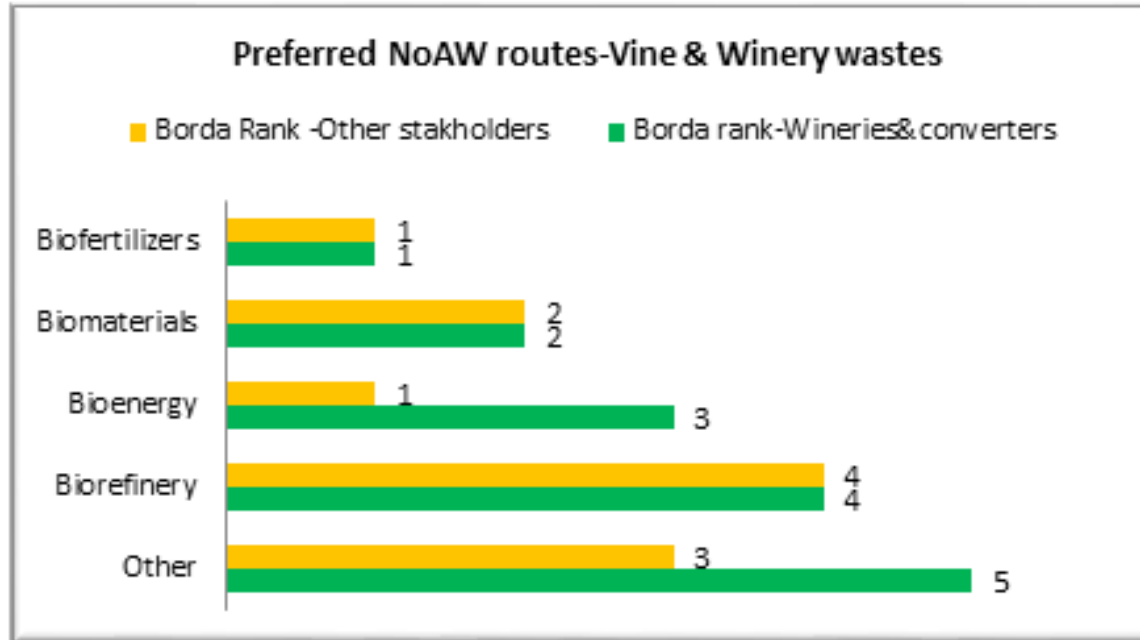
Three type of vine by-products:

- **Vine shoots:** crushed and left in the vineyard, or burnt
- **Vine roots:** firewood or wood barbecue
- **Grape stalks:** spread in the vineyard

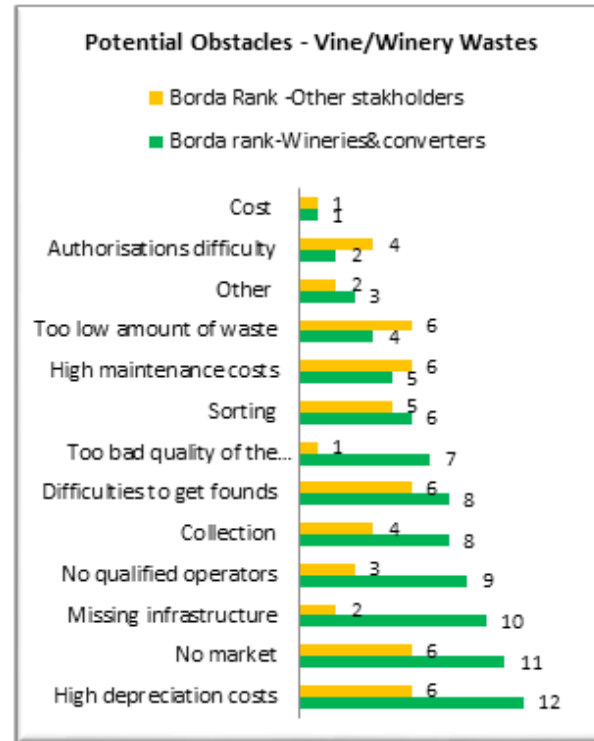
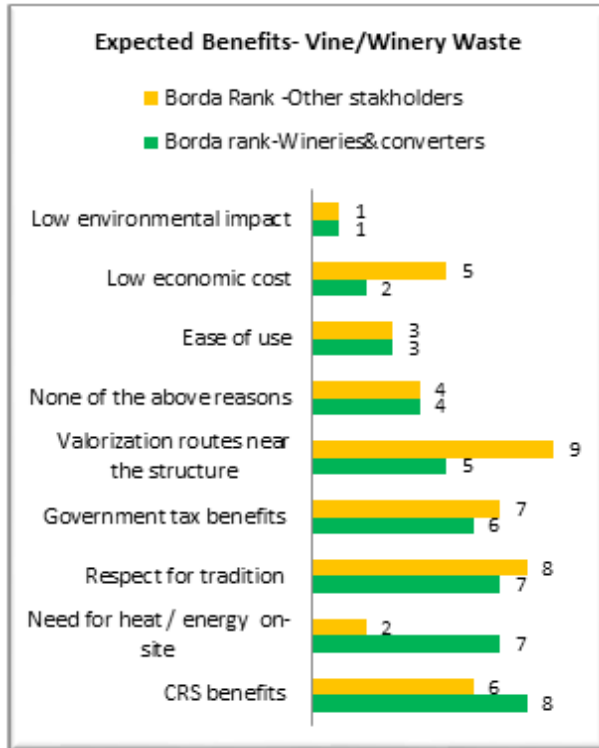


Different options are possible for **water** treatment but none of these seems to satisfy them because of the cost, labour time and administrative complexity.

4- Preferences of stakeholders as regard new valorisation routes



5- Expected benefits and potential obstacles



DISCUSSION AND CONCLUSION

The results of this study not only highlight the crucial role of distillery in the wine by-products management and for the circularity of the wine sector, but also enhance:

- (1) The winemakers disempowering and lack of information regarding the environmental impact of winemaking
- (2) The distillery vulnerability because of their business model based on public subsidies (decrease of processing aid)
- (3) The challenge to attain a critical size motivated by the economic performance but which implied a lower environmental performance due to transport and logistics.