

Are farm to fork strategy goals reasonable and achievable? State of the art of Península de Setubal's winegrowers

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Abstract. The European Union's "farm to fork" strategy sets out several objectives to be achieved by farmers, who, among others, relate to increasing biodiversity, protecting soils and reducing the use of pesticides. The use of pesticides in 235 winegrowers in the Palmela region was evaluated between 2016 and 2021. To support some of the answers, a socio-economic survey was also carried out. The data analysed included the number of treatments, the dosages used, compliance with the pre-harvest interval, the reason why winegrowers performed phytosanitary treatment and how they chose a pesticide. In addition, residue analyses were carried out at the entrance of the grapes into the winery to assess whether the MRL was exceeded and whether were not authorised pesticides were used in the vine. For each year, it was found that, on average, farmers spray seven times, although the trend was to decrease and the most used pesticide belong to groups 3 (Triazol), according to the FRAC Codes. It was concluded that fear of diseases and pests and "empirical experience" sometimes go beyond knowledge and technology. In addition, the weak valorisation of grapes and discouragement with the implementation of some poorly reported strategies are factors that fuel the concern about the difficulty in achieving the goals.

Keywords: Pesticides, Farm to fork strategy, Sustainability, vineyard

1 Introduction

AVIPE is, since 2018, studying the behaviour of grapevine growers (GG) from Palmela region in the decision to spray PPP. The concerns regarding sustainability, PPP impacts in non-aimed organisms, the removal of active ingredients, residues reduction and food safety were analysed on the records of 235 farmers from 2016 until 2021.

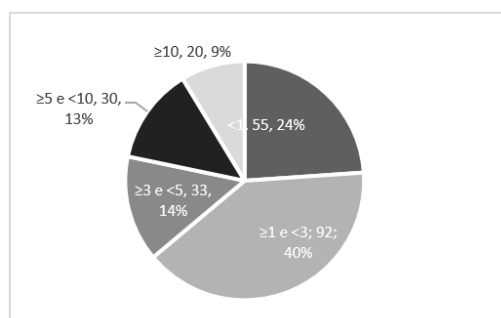
Due to the new approach of CAP for the 2020-2027 period and concerning the Portuguese legislation, we would like to study the behaviour of farmers, develop some relationships, understand why and how they take their decisions and make some suggestions for better approaches.

We also want to predict what's going to be farmers behaviour in a climate change scenario and for organic demands from consumers.

All 235 farmers receive technical notifications through season, by email or by post mail, with information about plagues and diseases risk level,

nutrition, irrigation and how to solve the several situations. Farmers received about 8 of this notification per season.

Farmers are mainly man, basic education, 68 years old, full-time farmer but it's not their only income, farm size of 4,8 Ha and doesn't have an idea about the activity costs.



Figures 1 and 2. N° of farms according to surface class (Ha) and its percentage.

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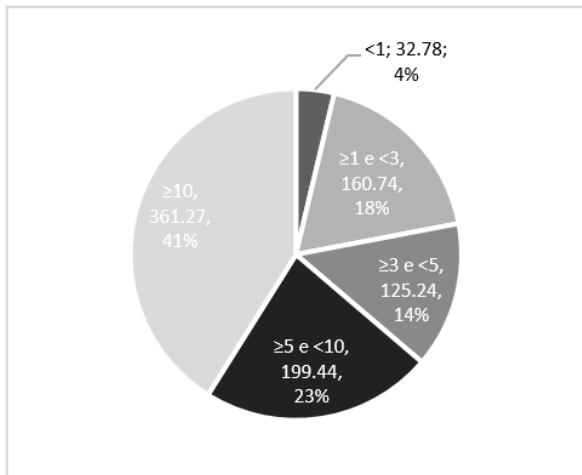


Figure 2. Sum of the areas according to surface class (Ha) and its percentage.

2 Material and methods

On 235 farmers, only 34 were having regular technical assistance before 2016.

The area represented on this study is 880Ha.

The number of treatments, the time between them, its doses and the preharvest interval were studied. It was analysed main pesticides chemical groups used and if it was exceed the maximum number of allowed application according to chemical groups and action mode. It was also a goal of this study to see if were used PPP not allowed for grapevine crops.

In order to have a better justification of the results, it was conducted a survey to farmers to understand the results. The survey was based on questions about socio-economic characterization and what drives them to choose the PPP and to spray. It was gathered 124 valid answers.

3 Results and Discussion

The results below are quite interesting and show the importance of a good information to farmers and a frequent technical assistance. Even thou some these farmers already had some support, all the other ones started to have in 2016. We can see a reduction in the number of treatments as well the increase of days between them. That's mainly on years with low values of precipitation, which is understandable, and mistakes related with doses are also less on these years. However, it's also on these years that pre-harvest interval is less respected. The usage of products that are not allowed in grapevine is increasing because the removal of active substances according to EU directives is also increasing. Farmers are not well informed and some of them have leftovers and continue to use. With these removals, it's expected that maximum allowed sprays according to active substance could also

increase. There's a tendency to reduce the number of treatments which can be explained by technical support.

These results show clearly the importance of technical support. This could be a solution to reduce mistakes and promote a better farming.

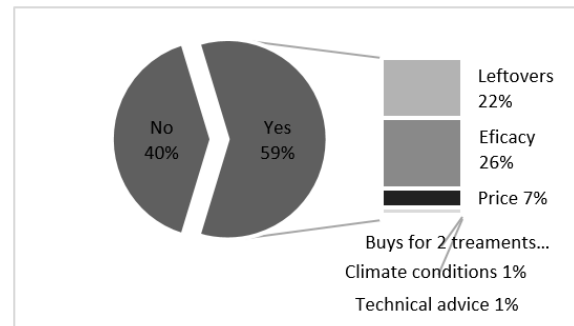


Figure 3. "Do you repeat treatments? For what reason?".

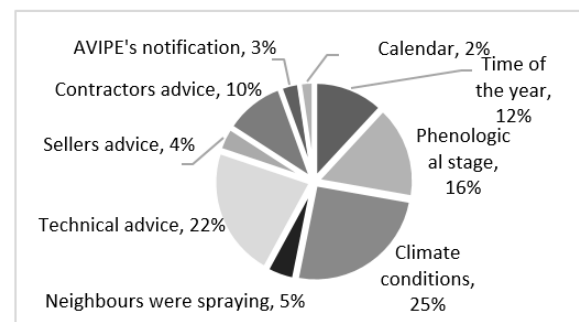


Figure 4. "What makes you spray the crop?".

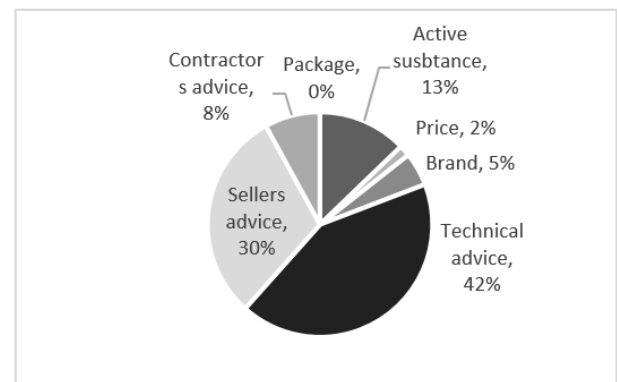


Figure 5. "What makes you buy the PPP?".

4 Conclusions

Considering FRAC codes, farmers use 8 fungicides groups. The main group is DMI due to its action against powdery mildew and black rot. It also has a major role on this choice, the price of this product has in shops and that all PPP companies have its own brand.

Sulphur is also a chosen active substance that is usually mixed with Fosetyl Al at the beginning of the crop cycle. If we add both fosetyl Al data, we'll have a similar percentage with Sulphur.

DMI products are also mixed with Fosetil Al, PhenylAmid and CAA. There's a much greater concern with downy mildew and usually products for powdery mildew are added for prevention. Since folpet doesn't have any action against black rot, farmers use DMI products for that purpose.

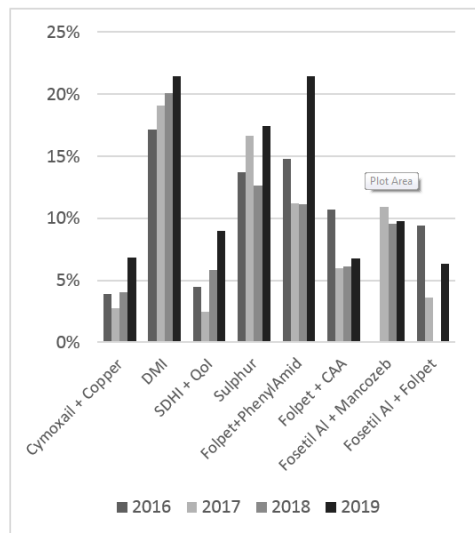


Figure 6. Most used FRAC groups.

The brands used for this active substance come from mainly one company and this is explained because 60% of these farmers buy all their products in just one shop. Exclusive marketing deals with PPP companies makes impossible to have a wide choice. This could be worrisome because it's important to change active

substance. As we have seen above, in a removal context of active substance, according to EU directives, farmers are not prepared for this change.

In addition to the analysis of the records and the interpretation of their relationship with the other data referred to above, residue analyses were carried out at the entrance of the grapes into the winery to assess whether the MRL was exceeded and whether were not authorized pesticides were used in the vine. This procedure was repeated in 2019-2021. The discussion around waste has been very intense in civil society. If, on the one hand, pesticides are indispensable to agricultural production, it is also true that their use must always take into account food security and environmental protection. It is important that the message is clear, transparent and assertive and that the consumer is also interested, critical and understandable. The second reason for the analysis of waste is related to the withdrawal of active substances and the existence of alternatives for farmers. In field trials, it has been noticed that the so-called "biological alternatives" are sufficient in situations of low/medium pressure of disease, but inefficient in medium/high pressure situations. By analyzing data from plant protection records and waste analysis, it was concluded that fear of diseases and pests and "empirical experience" sometimes go beyond knowledge and technology. In addition, the weak valorization of grapes and discouragement with the implementation of some poorly reported strategies are factors that fuel the concern about the difficulty in achieving the goals.