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INTRODUCTION

Pesticide formulation trade moves millions of dollars every year and has a significant participation in world's economy. According to the Food and Agriculture Organization of the United Nation (FAO) [1] Brazil was the country that most imported pesticides in 2018. The Brazilian PRF (Federal Highway Police) presented data exposing pesticides seizures reached 90 tons in October 2020, over 30 tons higher than the same period in 2019. While in 2017 the sum of losses in the productive sector and tax evasion reached R \$ 3.1 billion, the amount reached in the following year was R\$ 8.9 billion and R\$ 11.2 billion in 2019 [2]. So, this study aimed to evaluate the authenticity of formulated pesticide products samples (active ingredient and concentration). A total of 326 samples (319 of fungicides and 7 of insecticides) of formulated products were analyzed in the Center of Research and Analysis of Residues and Contaminants (CEPARC) from March 2017 to March 2021.

RESULTS

Figure 3 - Results of the analysis of formulation 1, that presented trifloxystrobin and prothioconazole as active ingredients (217 samples).

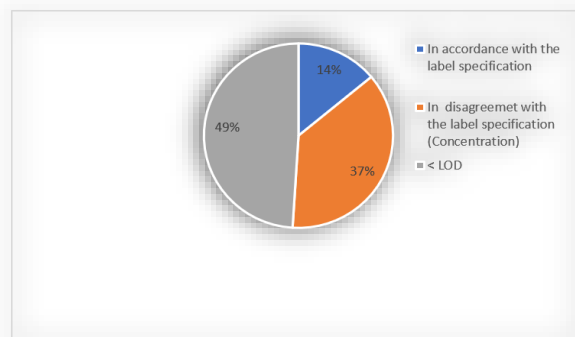


Figure 4 - Results of the analysis of formulation 2, that presented azoxystrobin as active ingredient (29 samples).

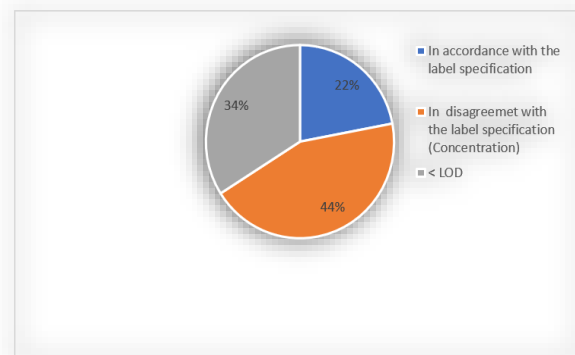
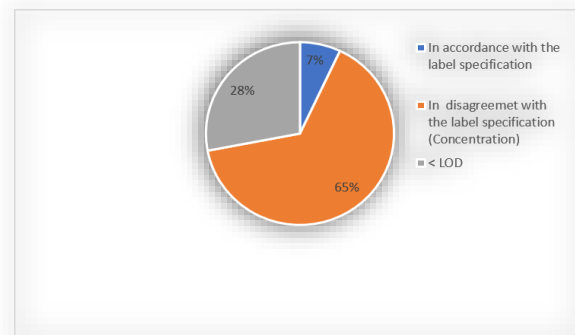


Figure 5 - Results of analysis of formulation 3, products that presented pyradobrin as active ingredient (41 samples).



CONCLUSIONS

- Based on the results it is possible to realize that most of the analyzed products are in disagreement with the label specifications which demonstrates the reality of the agrochemical sector of Southern region of Brazil.
- Indeed a better control and appropriate inspection are required in order to ensure that pesticide formulated products meet the quality standards required by national pesticide regulations.

EXPERIMENTAL CONDITIONS

Figure 1 - Sample preparation procedure.

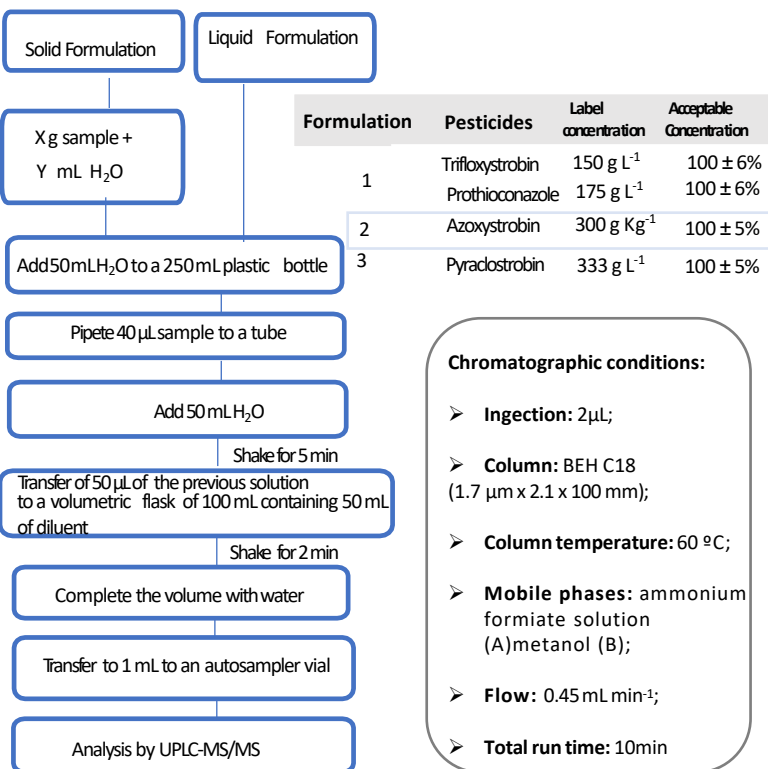


Figure 2 - UPLC-MS/MS model Xevo TQ5 (Waters, USA).