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# **Environmental effects of predominant** practices for the passion fruit production in the Huila Department, Colombia

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#### Introduction

Colombia is characterized as one of the countries with high diversity in the production of passifloras in the tropics. Huila is one of three crops in Colombia with the highest departments production of passion fruit (*Passiflora edulis*), however, the most predominant management practices for its cultivation have been traditional, without considering technological recommendations under the One Health approach (food, human, animal, and ecosystem safety).

#### **Results**

High incidence and severity of pests, and consequently, the phytosanitary control implemented by the farmer is through the inappropriate use of chemical pesticides.

Table 1. C

Safety of the crop and of the fruit produced Loss of pollinating insects and other beneficial biofauna Logging of native forest species Inadequate water regulation

**Environmental impact assessment of inappropriate cultivation practices** 



Figure 1. Location of the study area.

### **Objectives**

anagement practiceActive ingredient / productApplication per growing seasonPart andActive ingredient / productApplied to the soil during the first month, thereafter every 15 days.PertilizationDiammonium phosphate, 15- 15-15 Fertilizer, Humus, 10-30- 10 fertilizer, 17-6-18 fertilizer, foliar fertilizer, Micronutrients fertilizer.Foliar every 8 days in the first month, then every 15 days until flowering.WeedingGlyphosate, Paraquat [1] [3]Every 3 monthsInsecticides: Thiamethoxam, O,O-dimethyl dithiophosphate of diethyl mercaptosuccinate, Dimethoate, Mirex (a chlorinated insecticide),Rotation and mixing of products - application after	<b>ble 1</b> . Crop management practices					
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Carborulan, protenoios, Phenthoate, etc. [1] [2]. disease control

> In the flowering Fungicides: 250g/l phase (2 - 3 Difenoconazole, 720g/ltr times/week) Chlorothalonil, Mancozeb, Kasugamycin, Sulfur, Metalaxyl-M & S-isomer, Azoxystrobin,

every 8 days.

tamination of surface and sub-surface water bodies			
Reduction of soil microbial activity by toxicity			
Loss of natural fertility of soils			
Soil loss by water erosion and inadequate practices			
Leaching of nutrients through the soil profile			
Soil contamination by use of chemical pesticides			
	Low	Medium	📕 High
	Impact level		

Figure 6. Impact assessment on environmental factors

### **Conclusions**

Evidence of loss of biodiversity (pollinating insects), deforestation, as well as contamination of water and soil resources due to inadequate crop management practices.

Agricultural practices show a significant impact not only on access to international markets but also on the environment.

Low adoption of sustainable technologies to ensure fruit quality and safety, non-responsible use of ecosystem services, and environmental awareness of poor protection.

Analyze the passion fruit crop management practices employed by producers in the municipalities of La Plata, Guadalupe, and Suaza in the Huila department, and observe the potential impacts of these traditional effects and technologies.

### **Materials and Methods**

A participatory research process (workshops) was carried out with passion fruit producers, local authorities, and extensionists in the three municipalities of La Plata, Guadalupe, and Suaza in the Huila department.



Difenoconazole, etc. [1] [3].



Figure 3. a) Pesticides application passion fruit crop; b) Evidence of contamination in the field by empty pesticide containers



**Figure 4.** Need for hand pollination due to loss of pollinating insects

#### References

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## Acknowledgements

#### Passion Fruit producers



**Figure 2.** Focus group approach



**Figure 5.** Deforestation by use of native woody species for the establishment of the trellis tutoring system

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