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Introduction

Paraquat has been used as an herbicide since 1962 and is one of the most sold agrochemicals around the world, however, there is evidence of the high acute toxicity for human health. In this moment, paraquat is prohibited by Europe Union and restricted in other countries, including Costa Rica

Materials/ Methods

A) Chemical control alternatives. We tested eight herbicide mixtures and we evaluated: Damage percentage (3, 7, 14, 28, 42 DAA) and Fresh and dry weight of aerial biomass (42 DAA)

B) Use of propane: Three dosages of propane (25, 50 and 75 kg/ha) paraquat (300 g ai/ha) and a control plot, and evaluate: Damage percentage (7, 21 DAA) and Fresh and dry weight of aerial biomass (42 DAA).

Results/ Discussion

The weeds sprayed with paraquat were the most damage (88%) 7 DDA

Since 14 DDA to 42 DDA the mixture that worked better was glufosinate ammonium + saflufenacil. Glufosinate ammonium by itself and in mixture with other molecules, was statistically similar in fresh weight at 42 DDA

Higher doses of propane were the most effective for weed control, but not exceeding the damage caused by paraquat.

Conclusion/ Perspective

Glufosinate ammonium + saflufenacil could be used instead of paraquat, due to a possible ban of the molecule. Propane for weed control is not as effective as paraquat, but some improves can be done to make this technology more efficient.

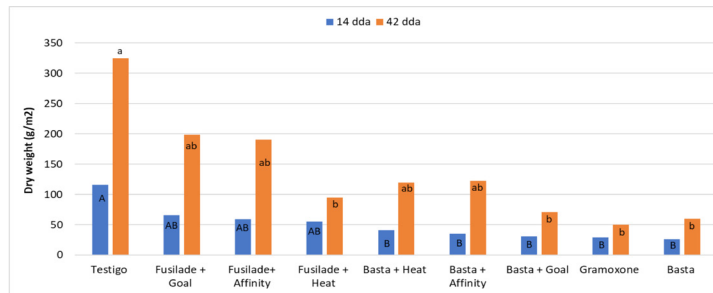


Figure 1: Dry and 42 daa for each treatment

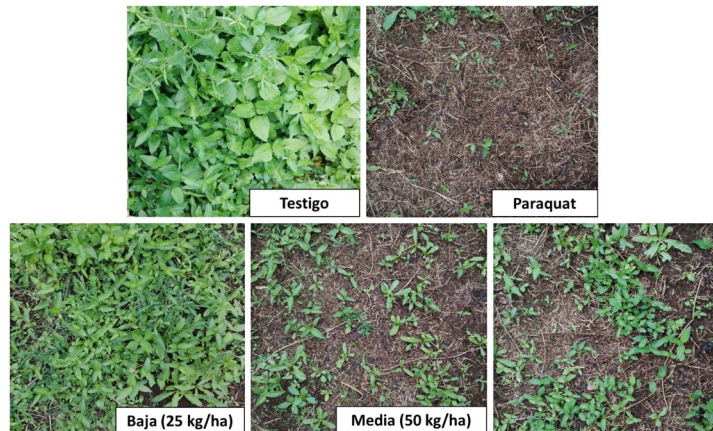


Figure 2: Treatment situation at 21 DAA