Weed detection among soybean plants in artificial lighting environment using multispectral images and Computer Vision

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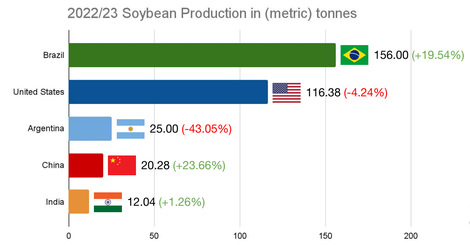
INTRODUCTION

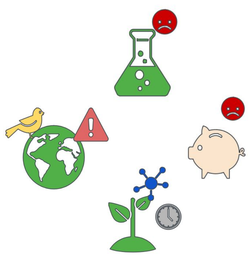
Soybean (*Glycine max*) is one of the most important world crops and is grown for oil and protein.

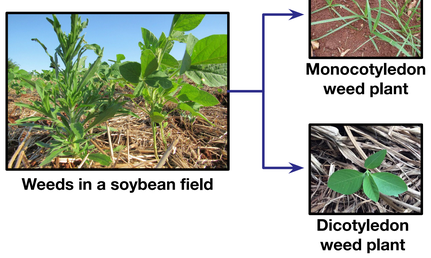


Source: United States Department of Agriculture (2023)

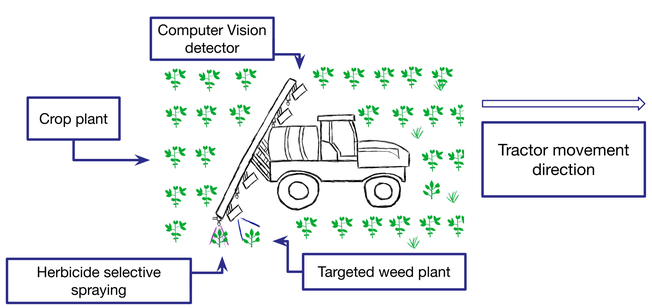
WORLD
369,720,000

Weeds are one of the main problems in crop fields, as they compete for water, light, nutrients and growth space (Islam *et al.*, 2021).





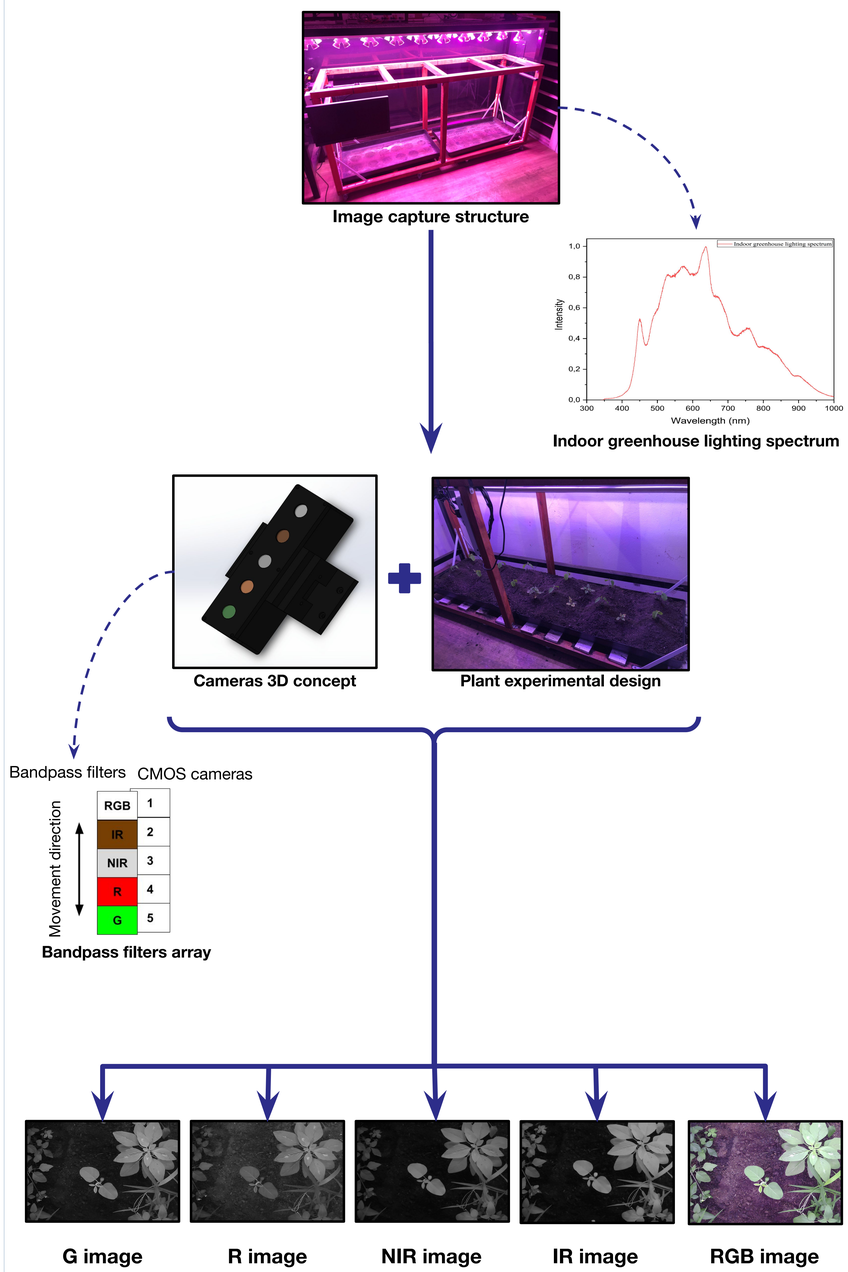
Selective spraying systems may play an important role in reducing the use of herbicides.



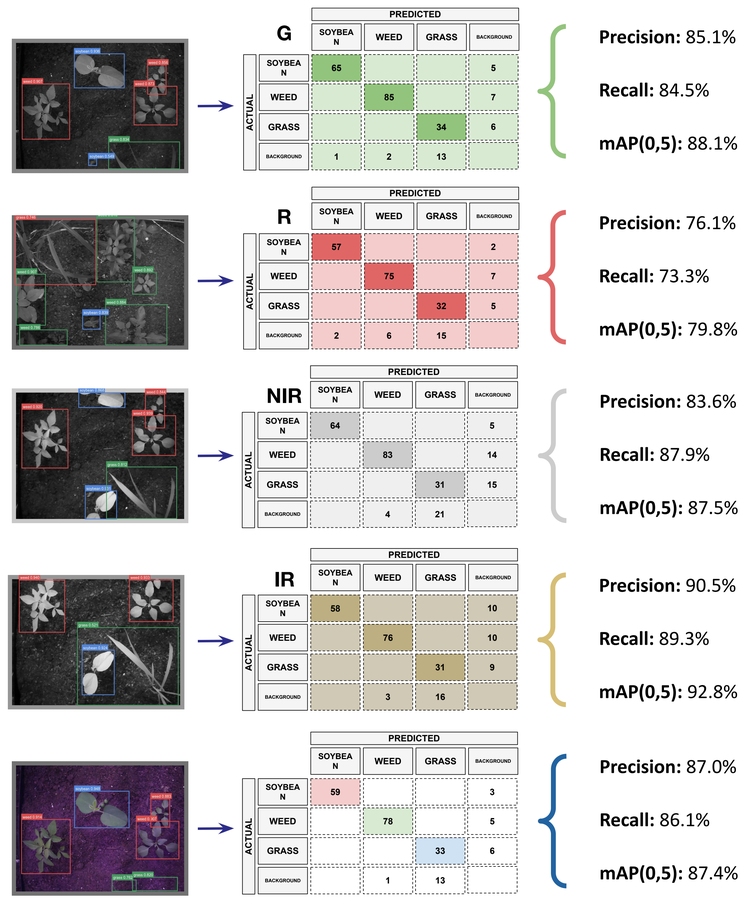
PURPOSE

To develop a multispectral camera system for in-crop weed recognition using Computer Vision techniques.

METHODS



RESULTS



CONCLUSIONS

The results suggest that the combination of Computer Vision and multispectral images is a more efficient approach for targeting weeds among crop plants for post-emergence herbicide applications.

ACKNOWLEDGMENTS

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Islam, Nahina, Md Mamunur Rashid, Santoso Wibowo, Cheng-Yuan Xu, Ahsan Morshed, Saleh A. Wasimi, Steven Moore, e Sk Mostafizur Rahman. 2021. "Early Weed Detection Using Image Processing and Machine Learning Techniques in an Australian Chilli Farm". Agriculture 11 (5): 387. https://doi.org/10.3390/agriculture11050387.

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