

SUGARCANE IN REUNION ISLAND

THREE METHODS OF ASSESSING CROP COVER BETWEEN TWO CANE CYCLES



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INTRODUCTION

Three methods of evaluating the crop cover between two cycles of cane were tested : one was visual, the second linear (using transects), and the third using a drone. What are the advantages and limitations of each of these methods regarding their level of accuracy and speed of implementation?

MATERIALS & METHODS

- A 2 ha non-irrigated farmer's plot in Sainte-Marie (in the North) ;
- 2 cover crops sowed in September 2015: *Crotalaria juncea* & *Vigna unguiculata* + 1 reference control (without cover crop) ;
- 3 observation methods:

Every 20-25 days
for 2.6 months

- Visual assessment across a 15 m² area;
- Linear: transects every 10 cm by 10 m;
- By drone: an RGB and NIR flight once at the end of the test.

RESULTS

The example of cover crop *V. unguiculata*, a herbaceous broadleaf lianascent plant, was chosen to illustrate the data. The main difference between the linear (Fig.1.) and the visual assessments (Fig.2.) concerned the evaluation of weed growth.

- With the visual method, only the top stratum is assessed, so that weeds under this stratum are not counted when *V. unguiculata* covers the plot.

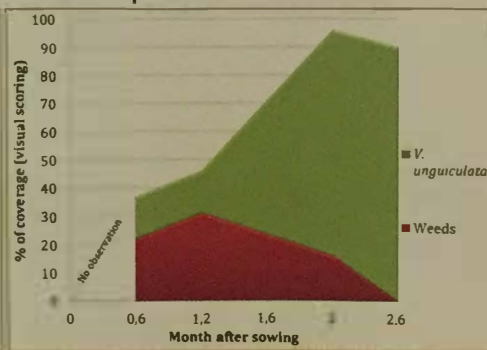
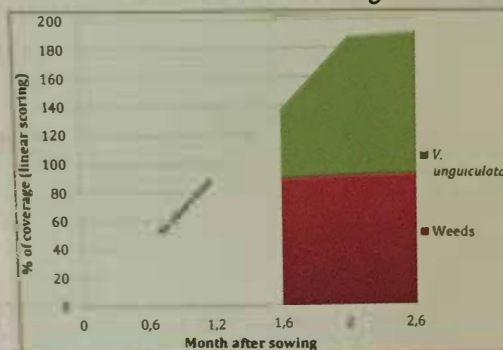


Fig. 3 Species Classification - December 10, 2015

- The classification of plant species by drone (Fig.3.) remains difficult when based on the analysis of NDVI data and spectral signatures.
- However, the overall recovery rate measurements (for cover crop and weeds) are accurate and similar to the visual assessments.

CONCLUSION

While visual and linear observations remain the easiest methods to implement, they show certain limitations regarding the time and manpower required. The use of new technologies remains an interesting farm-wide option for monitoring weed growth.

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