

# FRENCH SUGARCANE EXPERTISE

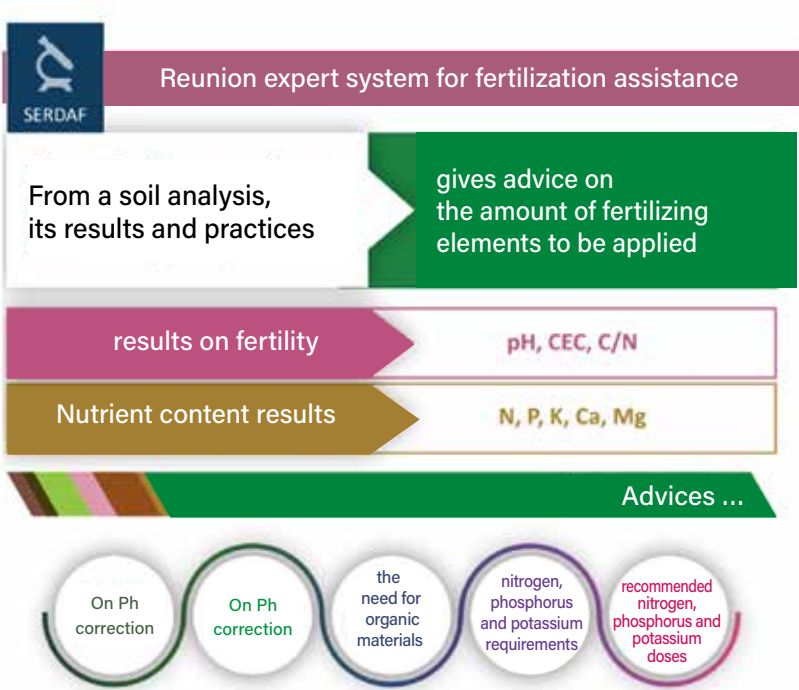




# DECISION SUPPORT AND SYSTEM ASSESSMENT TOOLS

## SERDAF

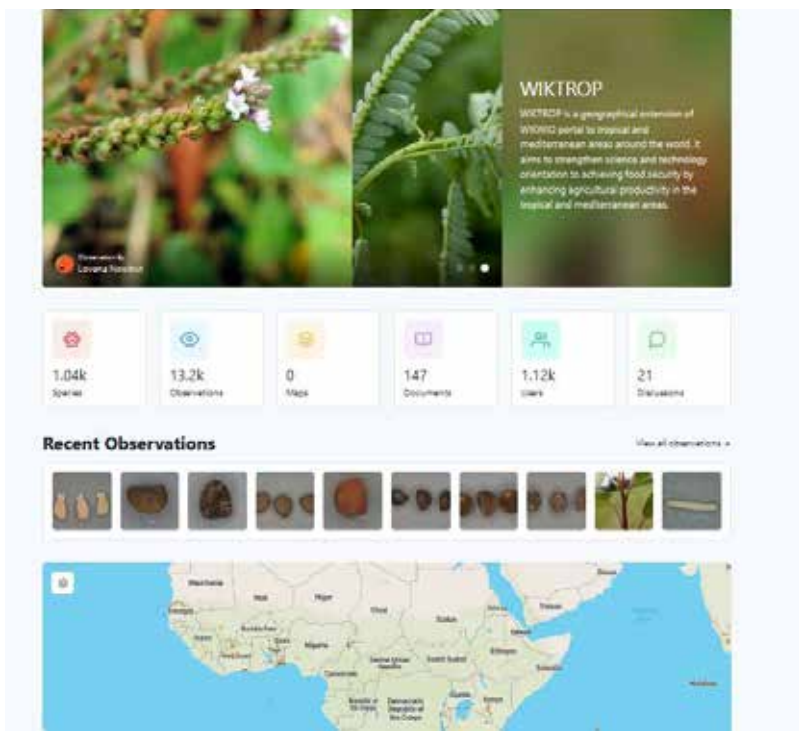
Based on soil analysis, crop plot geolocation and crop yield expectations, the Expert System for Fertilization Support in Réunion (SERDAF) produces an assessment of the nutritional status of target soils. While taking into account the harvesting method and irrigation status of the plot, SERDAF produces recommendations regarding organic matter input, liming and NPK fertilizer doses to be applied at planting and then over the next six ratoons.



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## WIKTROP

The WIKTROP v2.0 portal aims to build and develop a network of stakeholders to consolidate and share existing scientific and technical knowledge on weeds and weed control in tropical and Mediterranean cropping systems. This portal also offers IDAO software to help in the identification of the main weeds found in tropical and Mediterranean cropping systems. The WIKTROP platform is available via open access at: <https://portal.wiktrop.org>



screenshot of the app

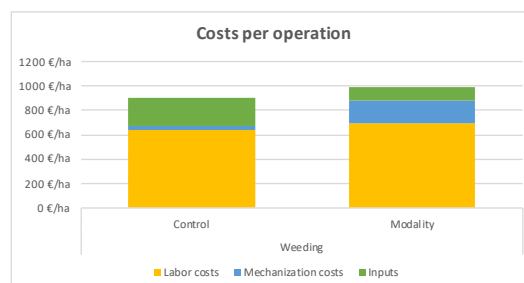
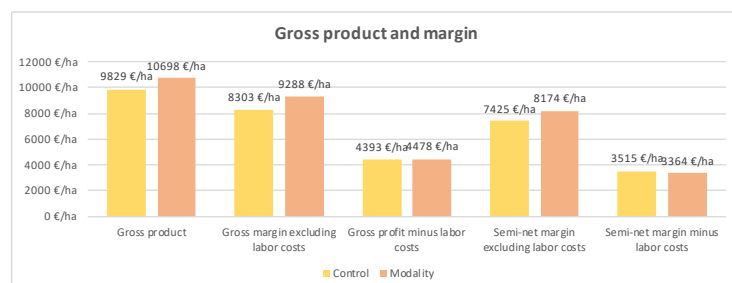
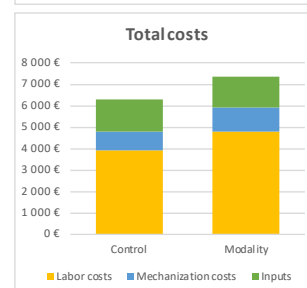
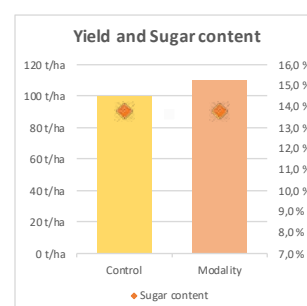
## OTECAS

OTECAS is a technical and economic tool focused on sugarcane to support testers, researchers and technicians in Reunion. It is free of charge and available online. It is designed to compare two crop management sequences, one of which is innovative: herbicide treatment reduction, organic matter input, varietal changes, irrigation optimization, etc. The tool is simple and quick to use, and generates tangible economic results (products, mechanization and input costs, labour, gross and semi-net margins, etc.).



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| General data                          |            |            |               |      |
|---------------------------------------|------------|------------|---------------|------|
|                                       | Control    | Modality   | Balance sheet |      |
| Yield                                 | 100 t/ha   | 110 t/ha   | 10 t/ha       | 10%  |
| Sugar content                         | 13,8 %     | 13,8 %     | 0             | 0%   |
| Treatment Frequency Index (TFI)       | 5,27       | 2,63       | -2,63         | -50% |
| Working time                          | 287 h/ha   | 353 h/ha   | 66 h/ha       | 23%  |
| Gross product                         |            |            |               |      |
| Gross product                         | 9829 €/ha  | 10698 €/ha | 869 €/ha      | 9%   |
| Inputs                                |            |            |               |      |
| Total                                 | -1527 €/ha | -1411 €/ha | 116 €/ha      | 8%   |
| Fertilizers/amendments/biostimulants  | -1295 €/ha | -1295 €/ha | 0 €/ha        | 0%   |
| Herbicides                            | -232 €/ha  | -116 €/ha  | 116 €/ha      | 50%  |
| Water                                 | 0 €/ha     | 0 €/ha     | 0 €/ha        | 0%   |
| Other                                 | 0 €/ha     | 0 €/ha     | 0 €/ha        | 0%   |
| Labor costs                           |            |            |               |      |
| Total                                 | -3910 €/ha | -4810 €/ha | -900 €/ha     | -23% |
| Gross margin                          |            |            |               |      |
| Gross margin excluding labor costs    | 8303 €/ha  | 9288 €/ha  | 985 €/ha      | 12%  |
| Gross margin per hour of work         | 29 €/h     | 26 €/h     | -3 €/h        | -9%  |
| Gross profit minus labor costs        | 4393 €/ha  | 4478 €/ha  | 85 €/ha       | 2%   |
| Mechanization costs                   |            |            |               |      |
| Total                                 | -877 €/ha  | -1113 €/ha | -236 €/ha     | -27% |
| Semi-net margin                       |            |            |               |      |
| Semi-net margin excluding labor costs | 7425 €/ha  | 8174 €/ha  | 749 €/ha      | 10%  |
| Semi-net margin per hour worked       | 26 €/h     | 23 €/h     | -3 €/h        | -11% |
| Semi-net margin minus labor costs     | 3515 €/ha  | 3364 €/ha  | -151 €/ha     | -4%  |



Screenshot of the economic results on the app

## PLANT'ASSO



Plant'Asso is a French mobile application tool that compiles all data and experiments on the use of service plants in the agricultural sector in French overseas departments.

The main information is summarized in technical factsheets for growers, highlighting the benefits and drawbacks of plant associations,

contraindications and advice on the establishment and management of service plants. Over time, Plant'Asso will progress and be enhanced with new knowledge acquired by field operators (technicians, farmers, engineers and researchers).

Plant'Asso is available via open access on the RITA InterDom COATIS platform:

<https://coatis.rita-dom.fr/plantasso/>

### *Canavalia ensiformis*

Jack bean  
Sugarcane

Reunion Island  
Sainte-Marie



#### Service Plant characteristics

Fabaceae  
Exotic  
Annual  
Priority service: Weed management  
Secondary services:  
Biological and chemical soil fertility  
TKW: 2190 g  
Root system: Shallow tap root system  
aboveground biomasse: semi-erected

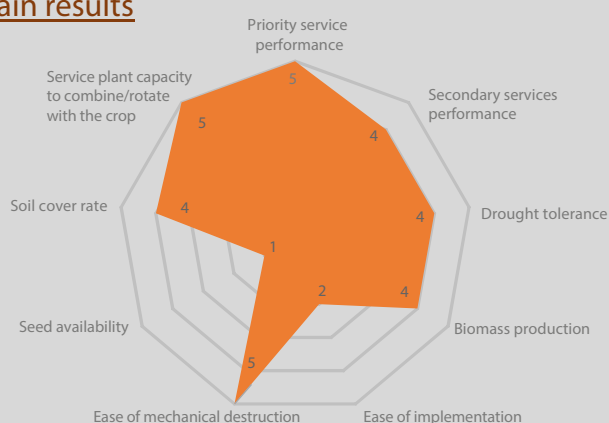
#### Crop management technique

Seeding rate: 146 kg/ha  
Number of plants: 33 300/ha  
Sowing date: 04/09/2018  
Sowing depth: 2 cm  
Crop system: combined  
Irrigation system: spray

#### Environment

Altitude: 50 m  
Soil pH: 5.5  
Soil type: Ferralitic

#### main results



#### Service Plant data

DM biomass:  
3.5 t/ha

Service Plant  
Fertilisation: none

Germination  
rate: 100%

#### Positives

- Extensive cover capacity
- Dies in the inter-row shade
- Not so sensitive to pests/diseases
- High nitrogen content
- Can be used as food
- Drought-resistant

#### Negatives

- High TKW
- Almost no seed availability

#### Recommendation

Sow along 2 inter-row  
sugarcane lines,  
45 days after ratooning  
or 70 days after planting



**Cirad:**

Antoine VERSINI  
Cécile NOBILE  
Marion SCHWARTZ  
Sandrine AUZOUX  
Joël HUAT

**eRcane:**

Alizé MANSUY