

# Sugarcane Intercropped with Oil Seeds in The Southeast of Brazil

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**Objective:** Based on the current increasing demand for food and biofuel, the study has focused on Oilseeds-Sugarcane intercropping. Canola tropicalization is a part of this research.

→ Sugarcane on Southeast of Brazil: more than 2 million hectares, being 600 thousand hectares with irrigation.

→ Canola Tropicalization: a second harvest would be possible, optimizing the use of land, machinery and staffs used for corn and soybeans crops in millions of hectares in Center West of Brasil (Cerrado Area).

## Material and Methods

Plots of Sugarcane, Intercrops and Oil Seeds were installed in April, 2015, in Piracicaba, State of São Paulo, Brazil (-22.70456S, -47.62284W, 540m).

- Sugarcane cv. RB867515
- Crambe cv. FMS Brilhante
- Canola cv. Hyola 61
- Canola cv. Hyola 401

The intercrops were established sowing two rows of oilseeds (Canola cv. Hyola 61; Canola cv. Hyola 401; Crambe cv. FMS Brilhante) between rows of sugarcane (1.4m).



## Results

✓ **Weather Data:** Daily average temperature: 15.2°C to 20.1°C; Global Solar Radiation: average of 15.65 MJ m<sup>-2</sup> d<sup>-1</sup>; Rainfall from April to August, 2015: 153,6mm; Rainfall from September, 2015 to April, 2016: 1,300 mm normally distributed.

### ✓ Single Crops Yield:

- Crambe: 2,230.0 kg ha<sup>-1</sup>
- Canola cv. Hyola 61: 1,566,0 kg ha<sup>-1</sup>
- Canola cv. Hyola 401: 1,105.0 kg ha<sup>-1</sup>
- Sugarcane: 74.2 ton ha<sup>-1</sup>

### ✓ Intercrops Yield:

- Crambe: 1,131,0 kg ha<sup>-1</sup>
- Canola cv. Hyola 61: 1,167.0 kg ha<sup>-1</sup>
- Canola cv. Hyola 401: 1,055.0 kg ha<sup>-1</sup>
- Sugarcane (Crambe): 87.6 ton ha<sup>-1</sup>
- Sugarcane (Hyola 61): 74.2 ton ha<sup>-1</sup>
- Sugarcane (Hyola 401): 63.8 ton ha<sup>-1</sup>

### ✓ Seeds Oil Content

- Crambe 33.0%
- Canola cv. Hyola 61: 31.0%
- Canola cv. Hyola 401: 28.8% da

### ✓ Qualitative analysis of sugarcane

Treatment	Brix (%)	POL (%)	ARC (%)	Fiber (%)	ATR (kg ton <sup>-1</sup> )
Sugarcane	13.0	9.51	0.44	10.04	93.65
Sugarcane x Crambe	13.0	9.48	0.45	10.57	93.17
Sugarcane x Can. H. 61	12.3	8.63	0.53	10.01	86.16
Sugarcane x Can. H. 401	12.8	9.55	0.40	10.15	93.61

✓ Further research will focus on improve irrigation and earlier maturity sugarcanes