

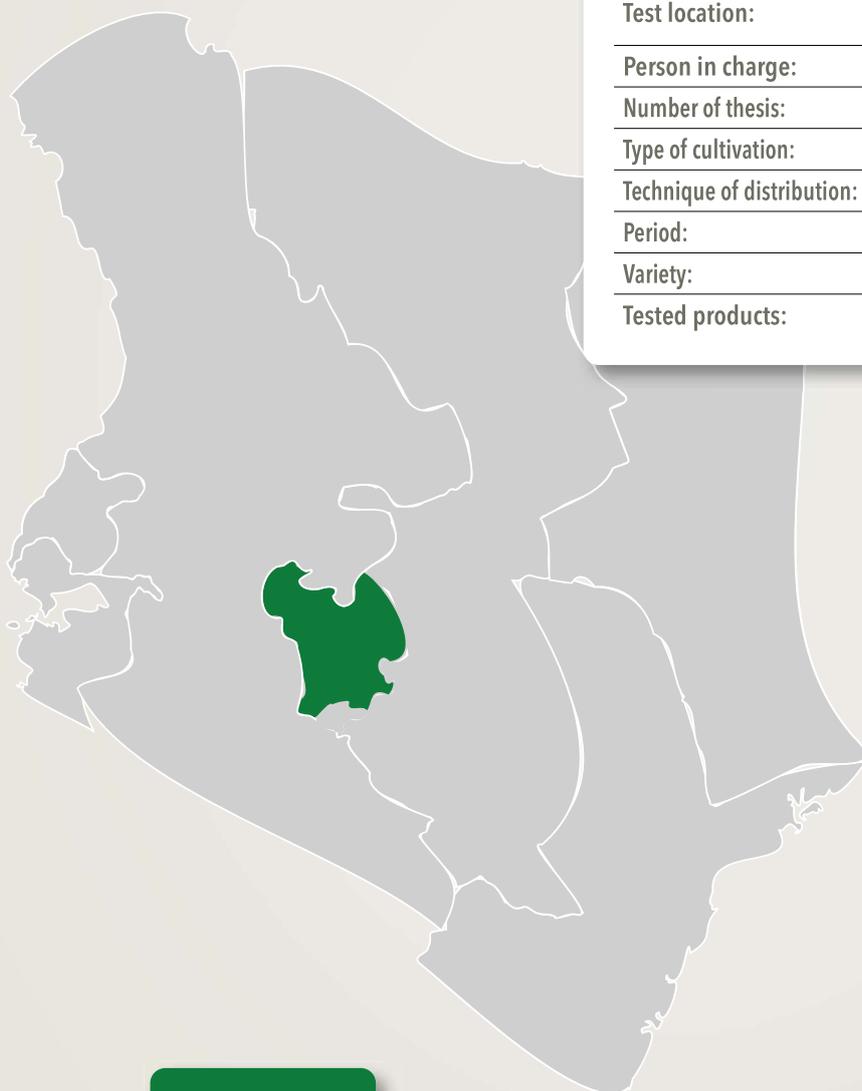
# GREEN BEAN

Improvement of vegetative parameters and yield



## PLACE

Test location:	Counties of Kiambu, Kirinyaga, Machakos and Murang'a
Person in charge:	Agrizone Consulting Limited
Number of thesis:	21 repetitions x 4 fields
Type of cultivation:	Open field
Technique of distribution:	Foliar application
Period:	26/09/2020 - 10/02/2021
Variety:	Samantha
Tested products:	ETIXAMIN



## OBJECTIVE

To evaluate the efficacy of Etximin applied by foliar application, on vegetative development and on bean yield.

# LEGUMES

## RESULTS ACHIEVED

In four different counties in central Kenya, the efficacy of Etixamin, applied by foliar application, on the vegetative and productive parameters of green beans was evaluated.

Etixamin was applied integrated into the traditional (mineral) practice, comparing its efficacy also with reduced dosages of the mineral fertilisers usually used and with another algae-based fertiliser for foliar application, widely used in Kenya.

The results obtained from the four fields consistently confirmed the differences between the various samples and fully supported Etixamin, which proved to improve the vegetative and productive parameters by significantly reducing the use of mineral fertilisers. With 50% of the dosages of the traditional practice, the four applications of Etixamin allowed for the best results to be achieved, even compared to the thesis with 100% and 75% of the dosages of the traditional practice. The results of Etixamin applied alone were also good, particularly on the vegetative parameters, while the limited supply of nutrient units to the soil was evident on productive parameters. Nevertheless, this thesis obtained much better results than the untreated.

## TEST PROTOCOL

STAGE	ILSA thesis 01 (Etixamin + 100% RFP*)	ILSA thesis 02 (Etixamin + 75% RFP)	ILSA thesis 03 (Etixamin + 50% RFP)	ILSA thesis 04 (Etixamin only)	Competitor thesis	Company thesis	Untreated
<b>Soil applications</b>							
Transplant	NPK 12-12-12 +4S: 125 kg/ha	NPK 12-12-12 +4S: 93.75 kg/ha	NPK 12-12-12 +4S: 62.5 kg/ha	/	NPK 12-12-12 +4S: 125 kg/ha	NPK 12-12-12 +4S: 125 kg/ha	/
Vegetative development	NPK 23-23-0: 75 kg/ha	NPK 23-23-0: 56.2 kg/ha	NPK 23-23-0: 37.5 kg/ha	/	NPK 23-23-0: 75 kg/ha	NPK 23-23-0: 75 kg/ha	/
Flowering	NPK 15-9-20: 75 kg/ha	NPK 15-9-20: 56.2 kg/ha	NPK 15-9-20: 37.5 kg/ha	/	NPK 15-9-20: 75 kg/ha	NPK 15-9-20: 75 kg/ha	/
Post-setting	N26 + 41Ca: 75 kg/ha	N26 + 41Ca: 56.2 kg/ha	N26 + 41Ca: 37.5 kg/ha	/	N26 + 41Ca: 75 kg/ha	N26 + 41Ca: 75 kg/ha	/
<b>Foliar applications</b>							
Transplant (26/09/20)	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	D.I Grow**: 3 l/ha	/	/
Vegetative development (10/10/20)	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	D.I Grow**: 3 l/ha	/	/
Flowering (24/10/20)	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	D.I Grow**: 3 l/ha	/	/
Post-setting (07/11/20)	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	Etixamin: 3 kg/ha	D.I Grow**: 3 l/ha	/	/

The other plant protection treatments were similar for all thesis, as per company practice.

\* RFP: Recommended Fertilisation Program (Company practice).

\*\* D.I Grow: organic liquid fertiliser based on algae.



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## RESULTS ACHIEVED - Height of plants after the first two foliar applications (cm)

FIELD	ILSA thesis 01 (Etixamin + 100% RFP*)	ILSA thesis 02 (Etixamin + 75% RFP)	ILSA thesis 03 (Etixamin + 50% RFP)	ILSA thesis 04 (Etixamin only)	Competitor thesis	Company thesis	Untreated
Kiambu	10.5	10.5	11.0	9.6	7.8	9.2	6.9
Kirinyaga	12.1	12.2	12.7	8.9	11.6	10.7	7.9
Machakos	14.5	14.8	15.2	11.4	12.7	12.8	9.5
Murang'a	11.6	11.6	12.2	9.5	8.7	10.6	7.6
<b>Average of the 4 fields</b>	<b>12.175</b>	<b>12.275</b>	<b>12.775</b>	<b>9.85</b>	<b>10.2</b>	<b>10.825</b>	<b>7.975</b>

## RESULTS ACHIEVED - Number of leaves

FIELD	ILSA thesis 01 (Etixamin + 100% RFP*)	ILSA thesis 02 (Etixamin + 75% RFP)	ILSA thesis 03 (Etixamin + 50% RFP)	ILSA thesis 04 (Etixamin only)	Competitor thesis	Company thesis	Untreated
Kiambu	31	27	29	20	28	24	15
Kirinyaga	35	34	33	27	33	28	18
Machakos	35	33	33	23	28	18	18
Murang'a	40	36	39	28	36	33	21
<b>Average of the 4 fields</b>	<b>35.25</b>	<b>32.5</b>	<b>33.5</b>	<b>24.5</b>	<b>31.25</b>	<b>25.75</b>	<b>18</b>

## RESULTS ACHIEVED - Number of pods per plant

FIELD	ILSA thesis 01 (Etixamin + 100% RFP*)	ILSA thesis 02 (Etixamin + 75% RFP)	ILSA thesis 03 (Etixamin + 50% RFP)	ILSA thesis 04 (Etixamin only)	Competitor thesis	Company thesis	Untreated
Kiambu	12	12	13	9	11	11	6
Kirinyaga	14	15	16	12	13	13	8
Machakos	18	19	19	12	18	16	9
Murang'a	16	15	18	11	12	15	8
<b>Average of the 4 fields</b>	<b>15</b>	<b>15.25</b>	<b>16.5</b>	<b>11</b>	<b>13.5</b>	<b>13.75</b>	<b>7.75</b>

# LEGUMES

## RESULTS ACHIEVED - Final yield (kg pods/ha)

FIELD	ILSA thesis 01 (Etixamin + 100% RFP*)	ILSA thesis 02 (Etixamin + 75% RFP)	ILSA thesis 03 (Etixamin + 50% RFP)	ILSA thesis 04 (Etixamin only)	Competitor thesis	Company thesis	Untreated
Kiambu	9,990	9,454	10,036	5,939	8,326	7,399	1,567
Kirinyaga	9,435	8,919	9,478	4,589	8,374	6,223	1,480
Machakos	11,470	10,111	11,522	4,791	9,870	7,566	1,800
Murang'a	11,100	9,810	11,151	3,899	9,551	7,322	1,742
<b>Average of the 4 fields</b>	<b>10,498.75</b>	<b>9,573.5</b>	<b>10,546.75</b>	<b>4,804.5</b>	<b>9,030.25</b>	<b>7,127.5</b>	<b>1,647.25</b>



**Etixamin +  
50 % Company practice**



**50 % Company practice**

Already during the vegetative development stage, foliar applications with Etixamin greatly improved the photosynthetic efficiency and vegetative development of the plants, even if soil fertilisation was halved.

