Evaluation of the biological activity of *Beauveria bassiana* microencapsulated Field against cactus weevil (*Metamasius spinolae*)

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Introduction. In the Chemical Ecology lab of CEPROBI and in the Food Department of the ENCB IPN have developed a microencapsulated with Beauveria bassiana isolated CEPROBI7d that maintains a greater than 80% viability up twelve months of storage. Pozo, 2012, tested for viability and pathogenicity in laboratory but not in field conditions, in this study we evaluated the biological activity of *Beauveria bassiana* microencapsulated in field conditions against the prickly pear weevil.

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Methods. We conducted a field test using four treatments: (T1) control with tap water, (T2) microencapsulated with a concentration of 5.5x10 10 viable spores (T3) microencapsulated with a concentration of 1.58x1012 viable spores (T4) commercial product with a concentration of 1x1011 viable spores. Five cages were used per treatment, each cage completely covered prickly pear plant, in each treatment were released 18 insects per cage. The application was made to drip point covering the whole plant. For 20 days mortality were recorded daily and dead insects were placed in a humidity chamber to promote sporulation. Data were analyzed with the Kaplan - Meier test an mean separation by Holm-Sidak. The severity of the treatments was measured by the scale proposed by Pozo, 2012, at 18 days after the death of the insects was measured the sporulation, infected insects were taken from each treatment and were suspended in 60 ml of sterile distilled water plus 0.1% Tween, stirred for 15min and three sub samples were taken from the suspension in order to measure concentration of spores.

Results. Significant differences between the mean values of survival of insects subject to treatments with p = (0.001), as shown in the following graph:

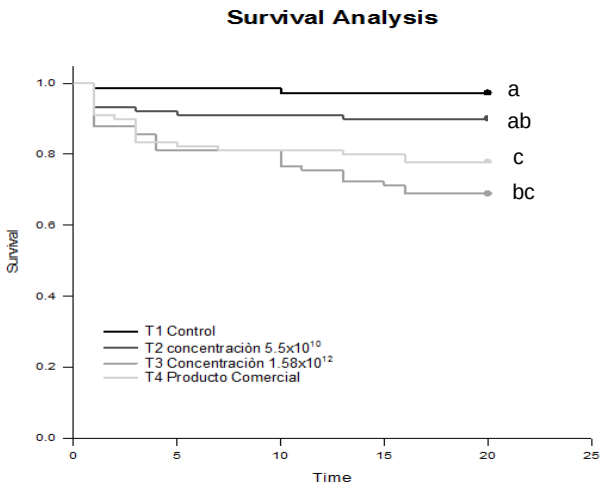

Fig.1 Adult survival probability of prickly pear weevil in field, n= 5 different letters on the lines indicate significant differences Statistic= 27.726; gl=3; p< 0.001, Holm-Sidak α= 0.005).

Table 1. Percentage of mortality, sporulation and severity index of microencapsulated product in field

Tratament	Mortality %	Esporulation conidias/ml	Severity index
T1	0	0	0
T2	10%	$2.4x10^9$	2.5
T3	31.1%	$7.8x10^9$	3.0
T4	22.2%	$6.7x10^9$	3.5

Conclusions. The microencapsulated product having a concentration of 1.58x1012 (T3) and the commercial product (T4) caused higher mortality than the control and that microencapsulation at a lower concentration.

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References.

1 Pozo, Santiago. C. O. (2012).Tesis Maestría. Centro de Desarrollo de Productos bióticos-IPN