Evaluation of biorracionales products on insect pest populations in commercial cultivation of chrysanthemum in the municipality of La Ceja (Antioquia).

SOWING	Crisantemos
MUNICIPALITY	La Ceja
DATES OF ASSESSMENT	Weeks 25 a 32 of year 2007
NUMBER OF BEDS	48
POPULATION SAMPLING	10%

Chrysanthemum is grown for cut flower export. There are different varieties and colors of this product, which is planted according to seasons, for example for export in the months of September to November should be planted varieties bronze and yellow. Chrysanthemum is affected from planting (cuttings) by pests and diseases, which are controlled with applications of synthetic chemical pesticides. Biological control or use of extracts and vegetable oils is very limited use, although its good properties against pests and diseases are known.

In this essay some biorracionales products for pest management during the first eight (8) weeks of crop development were used. The trial was conducted in a company in eastern Antioquia in 48 beds for cut flower production chrysanthemum.

For the application of the products taken into account the daily monitoring of pests and diseases with the use of platelet acrylic impregnated with a glue; also direct monitoring were performed on plants in order to determine the presence of insects or disease.

For monitoring insect pests platelets were counted attached to these and quantified, he took out a form in order to elaborate on a Cartesian plane behavior of pests. The most prevalent at this stage of the crop insects were: Whitefly (Trialeurodes vaporarirum), aphids (Macrosyphoniella sp); thrips (Thrips palmi and Frankliniella occidentalis). Also, directly monitoring the plants to determine the presence of mites (Tetranychus sp) and Lepidoptera (Copitarsia sp).

Table 1 shows the biorracionales products used, active ingredient, doses, pest or disease.

TABLE 1: biorracionales Products used for 8 weeks in the cultivation of chrysanthemum to control pests and diseases.

PRODUCT	ACTIVE INGREDIENT	DOSE	PEST / DISEASE
Biobass	*Beauveria bassiana*	10 13 esporas/Ha	Trips, ácaros , mosca blanca
Agroemulsiòn	Aceites vegetales	2.0 c.c./Litro	Minador , ácaros, mosca blanca
Agrokyl	Jabón potásico	3.0 c.c./Litro	Trips, àfidos, Mosca blanca
Biotricho	*Trichoderma harzianum*	10 13 esporas/Ha	Botrytis, Rhyzoctonia

Totalgarlic	Extract of garlic	1..5 c.c./Liter	PEST / DISEASE
Agrolec	Lecitina soy	1.5 c.c./Liter	Septoria , Botrytis
Biolec	*Lecanicillium lecanii*	10 12 espores/Ha	Thrips , aphids , white flies
Agrokur	Extract of Cùrcuma	1.5 c.c./Litro	Lepidòpteros
Biometa	*Metarrhzium anisopliae*	10 13 espores/Ha	Mites , Aphids
Agrotab	Hydrolate of tabacco	2.0 c.c./Liter	Aphids , thrips

Table 2 shows the synthetic products used , active ingredient , doses , pest or disease.

TABLE 2: synthesis products used for 8 weeks in the cultivation of chrysanthemum to control pests and diseases.

PRODUCT	ACTIVE INGREDIENT	DOSE	PEST / DISEASE
Sunfire	Clofenapir	0.4 c.c./Liter	Leafminer , mites
Vertimec	Abamectin	0.3 c.c./Liter	Leafminer , mites
Tracer	Spinosad	0.2 c.c./Liter	Thrips , leaf miner , Lepidoptera
W-12	Beta-cypermetrina	0.3 c.c./Liter	Leafminer , Lepidoptera
Epingle	Piriproxifen	0.5 c.c./Liter	Leaf miner , white flies

Confidor	Imidacloprid	0.15 c.c./Liter	Àfidos
Trigard Minador	ciromazina	0.3 grs/Liter	Minadores
Regent	Fipronil	0.4 grs./Liter	Trips, lepidòpteros
Dithane M-45	Mancozeb	1.8 grs./Liter	Botrytis, septoria

Table 3 presents the timing of product application to control pests and diseases in chrysanthemum.

Table 3. Applied products per week and per treatment

WEEK	ESSAY : APPLICATION OF BIORRACIONALES PRODUCTS	COMMERCIAL : APPLICATION OF AGROCHEMICALS
25	Agroemulsión + Biobass	Sunfire + Vertimec
	Agrokyl + Biotricho	
26	Totalgarlic	Nerisect – Dithane M-45
	Agrolec	
27	Totalgarlic	Tracer
	Agroemulsión + Biobass	
28	Agrokur	W-12 + Vertimec
	Agroemulsión + Biolec	
29	Agroemulsión + Biometa	Epingle + Confidor
	Agrolec + Biolec	Regent
	Agrotab	
30	Totalgarlic	Epingle + Vertimec
	Agrolec + Biolec	Trigard + Sunfire
	Agrokyl	
31	Totalgarlic + Ají	W-12 + Confidor
	Confidor + Regent	Vertimec + Sunfire
	Agroemulsión + Biometa	
	Agrotab	
32	Totalgarlic	Regent + W-12

CHRYSANTHEMUM VARIETIES PLANTED IN THE TRIAL AND THE
COMMERCIAL CROPS :

White reagan, Reagan, Sunny reagan, Reagan, Bronce reagan, Cocarde,
Sunny zembla, Riot, Dark wish, Jalisco, White needle, Rumba, Biarritz,
Brass, Orinoco, Cantata, Focus, Vybowld, Yoko ono, Brissa, Puma,
Remix, Yellow remix, Tedcha imp., Polaris, Kiwi, Vyking orange, Golden
polaris, Shock, Zembla, Remero, Dark yellow vero, Atlantis, Lexy, Narù,
Virginia, Royal mundial, Anastasia green, Cumbia, Red cumbia, Win,
Sky, Master, Music, Betender, Armeda, Remachi, Rebasco, Dècima,
Require, Weldon, Factor, Tinsel , Yellow Orinoco, Yellow brass, Falma y
Statesman.

RESULTS :

1. APHIDS

1. LEAFMINER

1. WHITE FLY

POBLACIONES DE MOSCA BLANCA
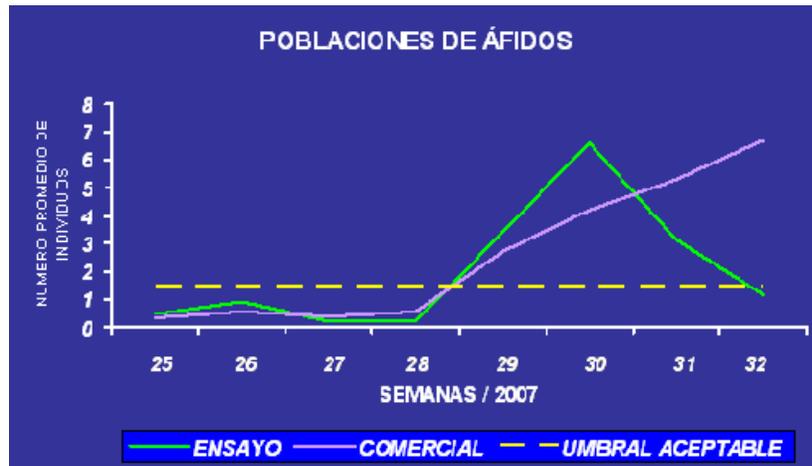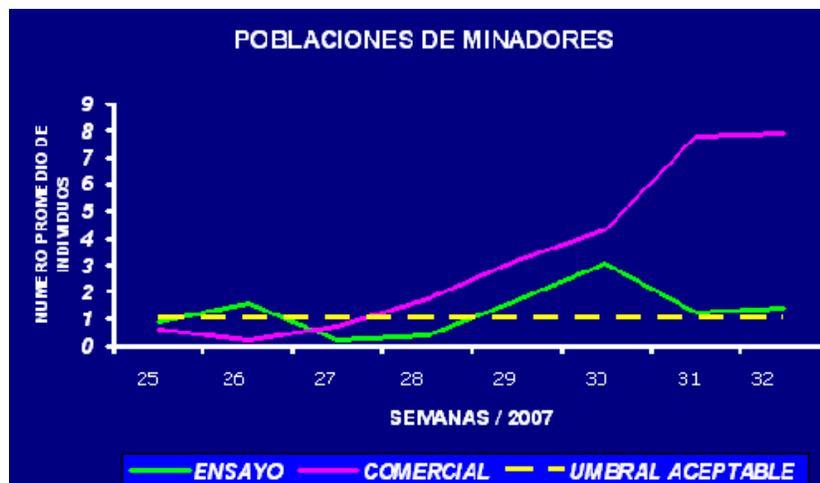
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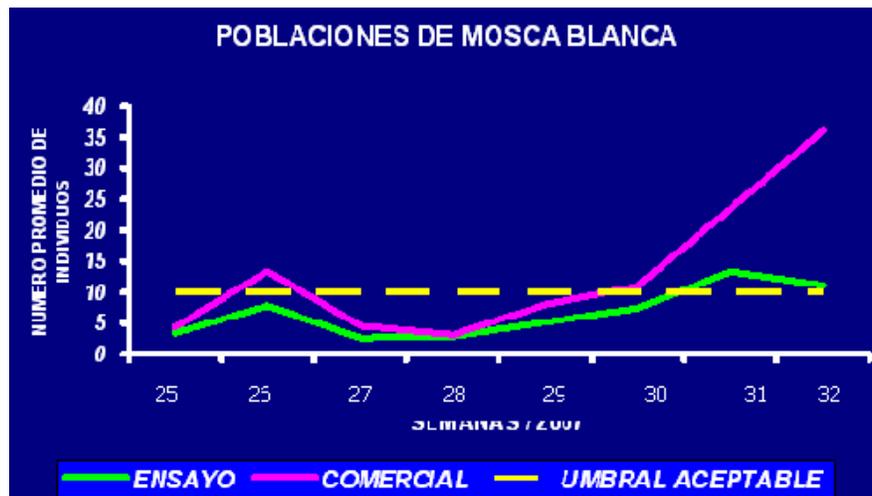
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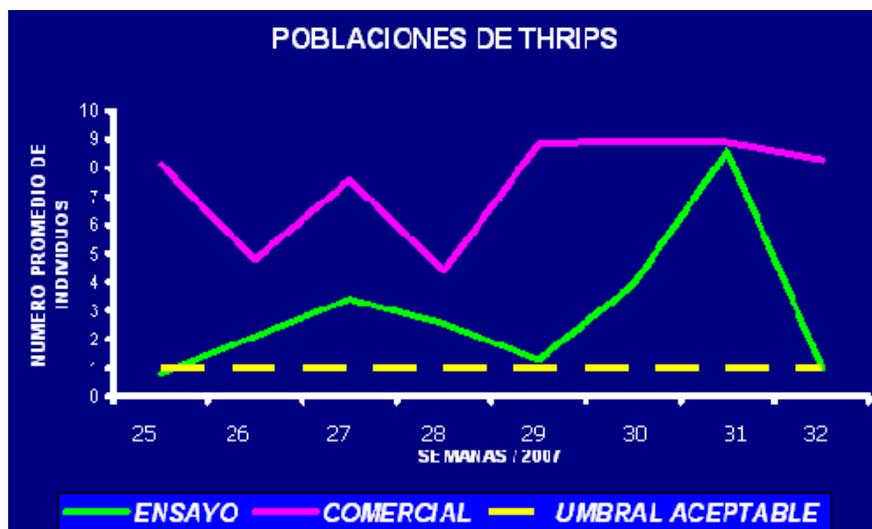
CONCLUSIONS AND RECOMMENDATIONS

1. In all cases the presence of pest populations in treatments with products biorracionales was lower compared with commercial products synthesis.

2. aphid control when he stopped applying the Totalgarlic, due to rotation with other products, an increasing trend was observed populations. Therefore, strategies to control these pests, you should consider the application of Totalgarlic all the time.

3. In the prevention and control of leafminers and whiteflies, employment biorracionales products remained within permissible thresholds; whereas when applied chemical synthesis stocks remained high.

4. In the case of thrips, when synthesis products were used in all cases the populations were maintained on the allowed threshold. When biorracionales products were used in some cases, populations remained close to the allowed thresholds;

however, it is recommended to evaluate other specific products that maintain the thresholds below permissible limits.

5. This research led to the conclusion that biorracionales products can replace in the short time the use of synthetic agrochemicals.