

Savings on Micothon air supported spraying machines in greenhouses

Micothon spraying systems need higher investments. Their reasons for existence are pure economical profits .

The economical benefits of Micothon systems are based on 4 points:

- Lower expenses on Plant Protection Products (PPP)
- Lower labor costs
- Higher crop yield due to less grow interference
- Products of better quality due to less usage of PPP (Retail demands)

Content:

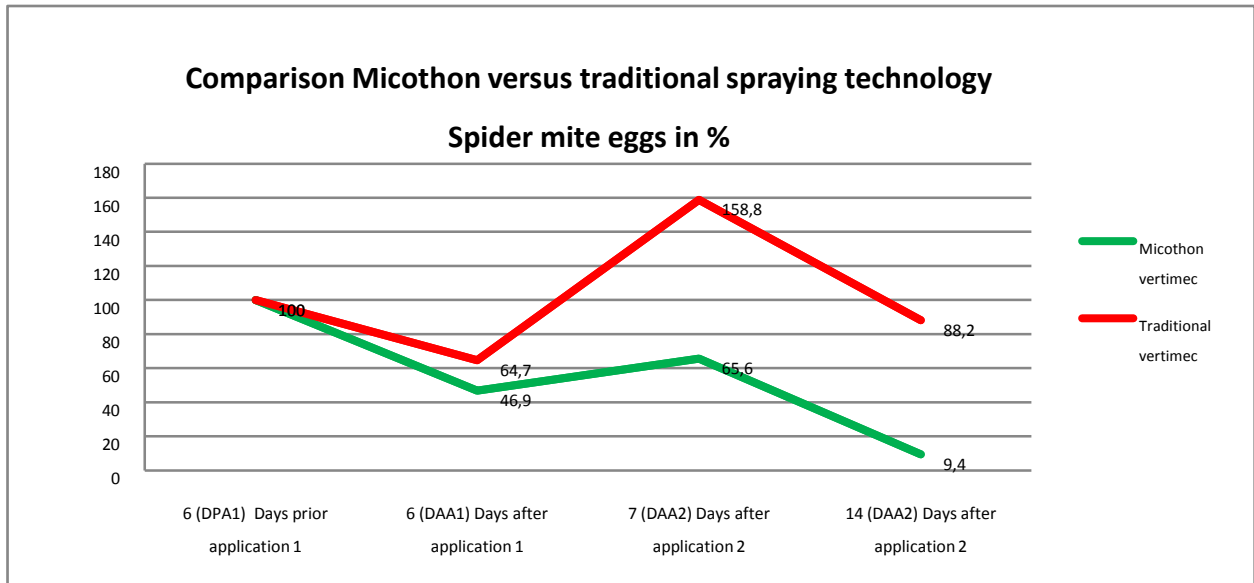
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Spridermite treatment in roses

2 PPP producers did a combined investigation regarding Micothon's spraying results. Micothon's results were compared with an upgraded traditional spraying system with a basic air support system.

During the first test the number of spider mite eggs that survived the treatment was counted.

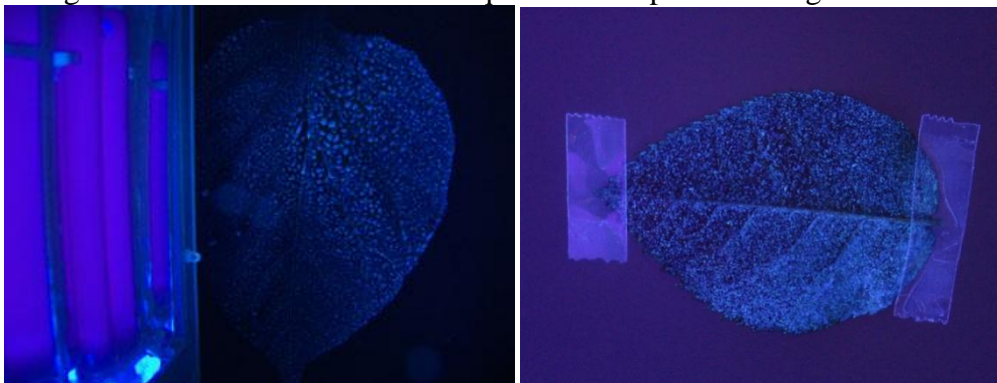
Practical test 1: Egg calculation



Conclusion 1:

- Traditional system: reduction **12 %** after 20 days
- Micothon: reduction **91 %** after 20 days. So **79 % better** result.

UV lighted Pictures below show the equal and complete coverage of the leaves.

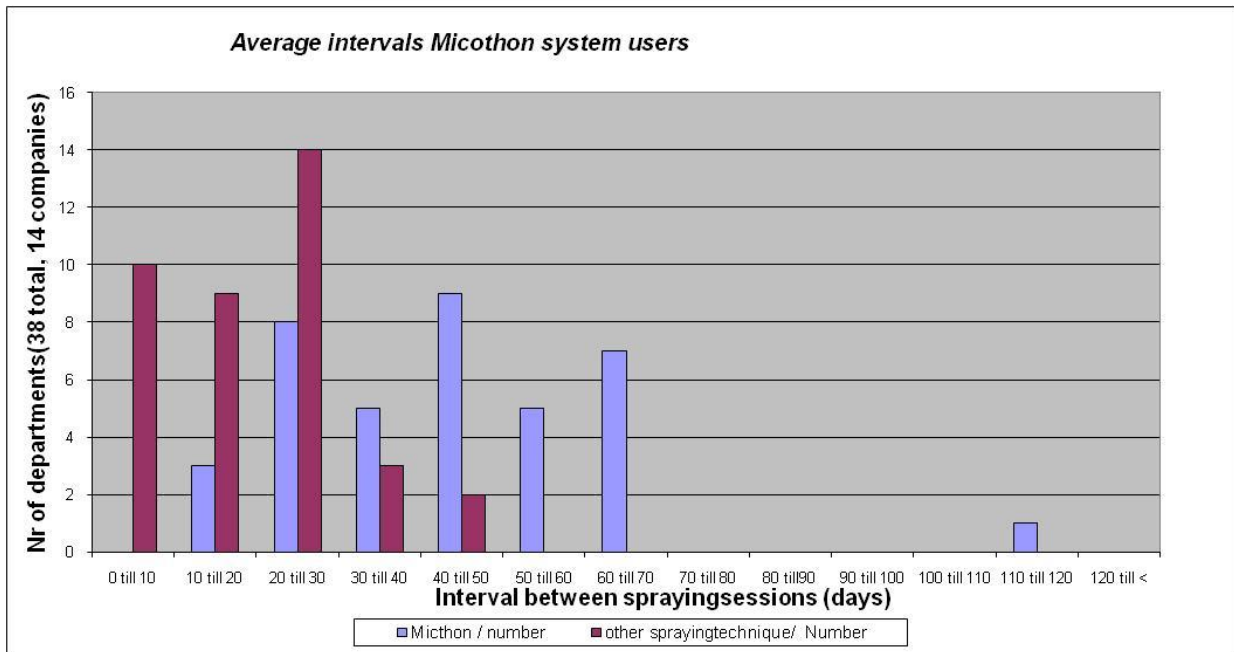


Practical test 2: registration of number of treatments during 1 year

After delivery of the first 20 machines Micothon registered the use of the machine by means of the Micontrol Crop protection registration system.

Review of results

Duration of interval between treatments	Micothon/nr of greenhouses	Traditional spr.system / nr of greenhouses
from 0 to 10	0	10
from 10 to 20	3	9
from 20 to 30	8	14
from 30 to 40	5	3
from 40 to 50	9	2
from 50 to 60	5	0
from 60 to 70	7	0
from 70 to 80	0	0
from 80 to 90	0	0
from 90 to 100	0	0
from 100 to 110	0	0
from 110 to 120	1 (3,5 months)	0
from 120 to >	0	0
Total nr of greenhouses	37	38
	Micothon	Traditional spraying machine
Average duration of the interval	44	22



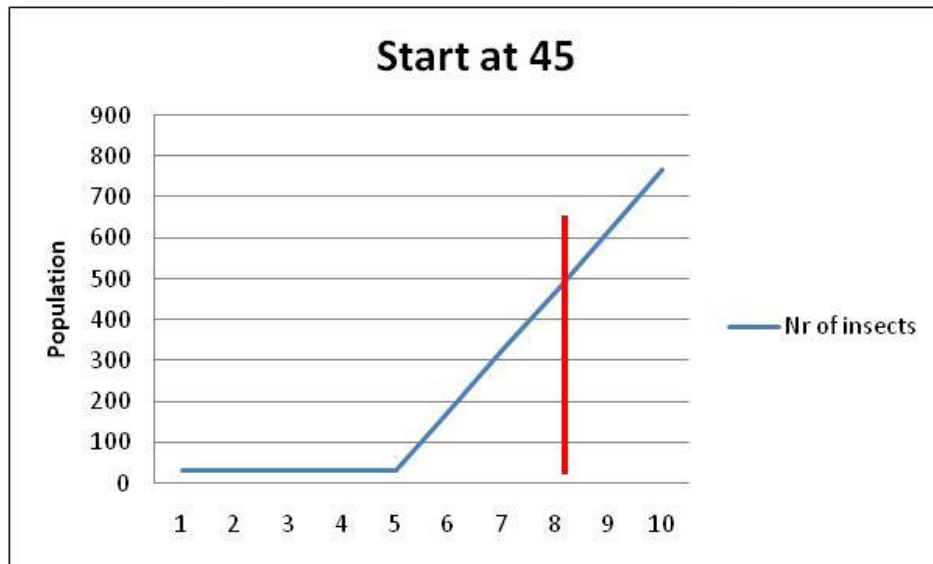
Conclusion 2:

The usage of Micothon helped to double the interval time between applications from 22 days till 44 days

The economic importance of optimal result of treatments: model

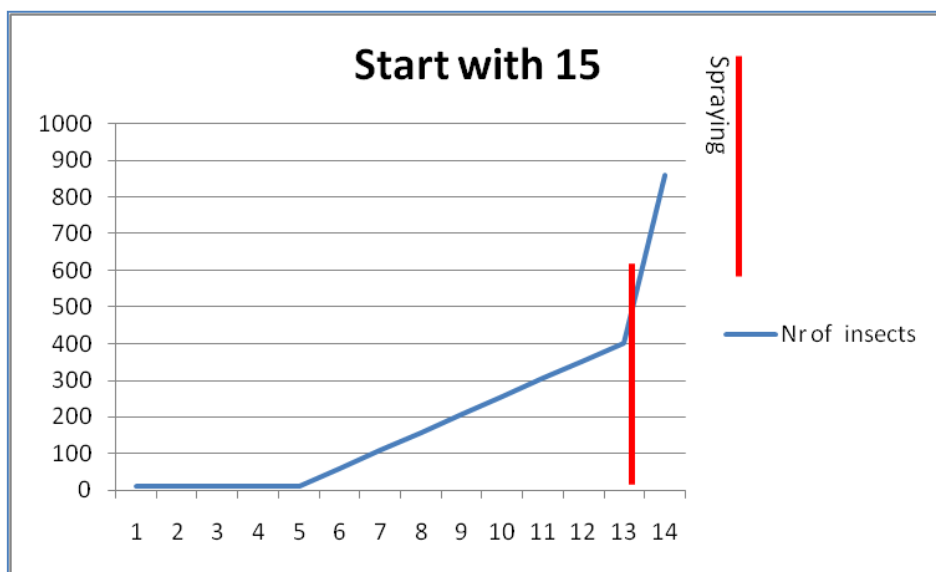
Assumptions: we make two successive treatments when there are 500 active pest units. A pest undergoes 3 stages in its development: egg (5 days), nymph (3 days), adult insect (6 days). An adult insect produces around 50 eggs, that is 8 eggs per day. The present model is based on real figures. The first diagram shows the result of the treatment with a traditional spraying device. There are 45 pest units on the plants left, the effectiveness is 91%.

Effectiveness - 91 %



The second diagram show the result of the treatment with a Micothon spraying machine. There are 15 pest units left on the plants. Thus, the effectiveness is 97 %.

Effectiveness - 97 %



Conclusion:

Table1: Good result. The interval between two treatments is 13 days. Thus, 28 treatments are done within the term of 1 year.

Table 2: Average results. The interval between treatments is 8 days. Thus, 45 treatments are done within the term of 1 year.

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So 6 % better result saves 17 treatments a year



Savings on plant protection products and less growth interference

In 2006 test were performed regarding spidermite treatment in Tomatoes. It was done in a testing area of 1500 m². The area was divided in a right sector, and a left sector of 750 m² each. The middle rows of plants were not measured for the test results to exclude interference.

Review and results:

may-oktober 2006

Testing greenhouse department: 750 + 750 m²,

750 m² MICOTHON semi automatic sprayed,
(2 x 250 m²)=500 m² buffer area,
750 m² Semiautomatic sprayer WITHOUT AIR
SUPPORT

Crop: Tomatoes, rockwool on gutters.

Tested pest: Spidermite

Controlled leaf surface 250 cm²

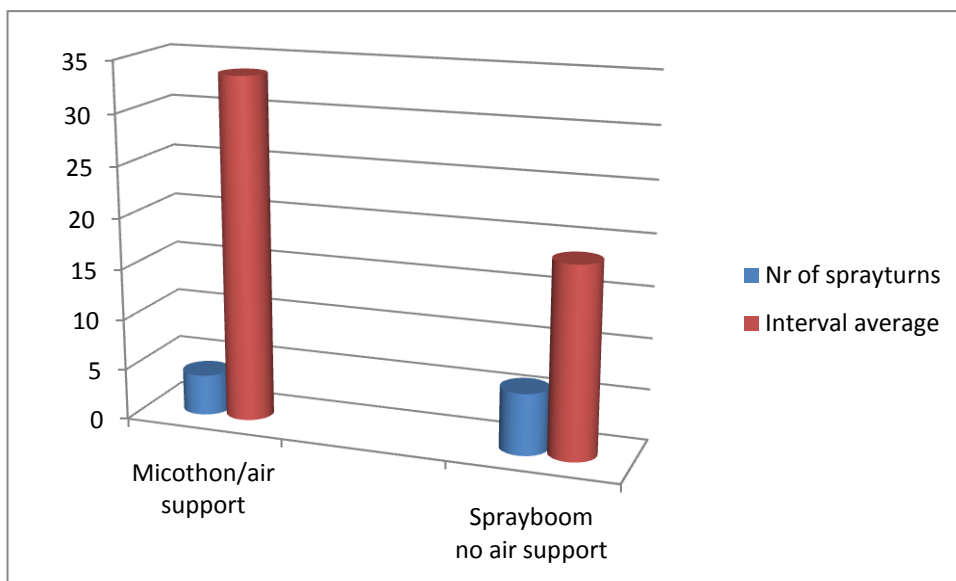
Note: test was specially for micothon, normally spidermite is biologically controlled.

Spraying decision at 100 live spiders/eggs.

	A	C
1st Block: Vertimec 2 x 1 l/ha		
Date 2006	15/22 may	15/22 may
Costs chemicals € / m ²	€ 0,03	€ 0,03
Alive eggs/mites 7 days after spraying	3	12
Date 2nd block Vertimec 2 x 1 l/ha	23/30 june	5/12 june
Interval	31	14
Costs chemicals € / m ²	€ 0,03	€ 0,03
Alive eggs/mites 7 days after spraying	4	18
Date 3rd block Nissorun 2 x 1 kg/ha	30 jul//7 aug	28 jun//6 jul
Interval	31	16
Costs chemicals € / m ²	0,02	0,02
Alive eggs/mites 7 days after spraying	3	14
Date 4 rd block Oberon 2 x 1 l/ha	15 /23 sep	
Interval	39	
Costs chemicals € / m ²	€ 0,03	

Alive eggs/mites 7 days after spraying	1
Date 4nd block Vertimec 2 x 1 l/ha	24 /31 july
Interval	18
Costs chemicals € / m2	€ 0,03
Alive eggs/mites 7 days after spraying	12
Date 5th block Nissorun 2 x 1 kg/ha	21/ 28 aug
Interval	21
Costs chemicals € / m2	0,02
Alive eggs/mites 7 days after spraying	10
Date 5 th block Oberon 2 x 1 l/ha	21 /28 sep
Interval	24
Costs chemicals € / m2	€ 0,03
Alive eggs/mites 7 days after spraying	9

Harvested crop kg/m2(year)	61,3	59,5
	Micothon/ air support	no air support
Nr of sprayturns	4	6
Interval average (days)	33,6	18,6
Chemicals costs/m2	€ 0,11	€ 0,16
Higher turnover/m2 (Average price 0,85 € / kg)	€ 1,53	



Financial results spraying with micothon in tomatoes:

Higher turnover/ m2:	€ 1,53
Less costs chemicals:	€ 0,05
Total Micothon revenues / m2 tomatoes	€ 1,58
Total Micothon revenues / ha tomatoes/year	€ 15.800,00

Result 3: Micothon saving in spidermite treatments in tomatoes is € 15.800,- /ha/ year.

Mildew spraying tests with Micothon in Cucumber spring 2009

Area 15.000 m² sprayed with Micothon air support strayer,
10.000 m² with traditional semi automatic without airsupport;

test period: 15 jan-2june 2009 (3 crops.year)

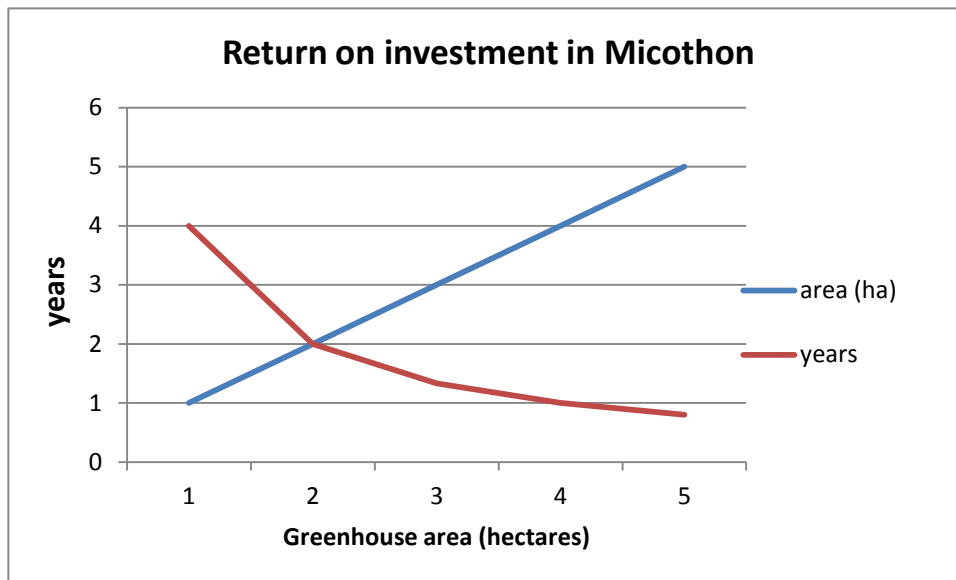
Species: Sacha

	Micothon air support	Vertical boom, No air support
1st treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	6-feb	6-feb
Costs/m ²	€ 0,01	€ 0,01
2 nd treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	15-feb	13-feb
Costs/m ²	€ 0,01	€ 0,01
3rd treatment Enzicur /bycor 2 + 2 kg/ha= 400€/ha	26-feb	22-feb
Costs/m ²	€ 0,04	€ 0,04
4rd treatment Enzicur /bycor 2 + 2 kg/ha= 400€/ha	5 mar	28-feb
Costs/m ²	€ 0,04	€ 0,04
5rd treatment Enzicur /bycor 2 + 2 kg/ha= 400€/ha	13 mar	6 mar
Costs/m ²	€ 0,04	€ 0,04
6st treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	23 mar	13 mar
Costs/m ²	€ 0,01	€ 0,01
7 th treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	3-apr	20 mar
Costs/m ²	€ 0,01	€ 0,01
8 th treatment Enzicur /bycor 2 + 2 kg/ha= 400€/ha	13-apr	27 mar
Costs/m ²	€ 0,04	€ 0,04
9 th treatment Enzicur /bycor 2 + 2 kg/ha= 400€/ha	23-apr	3-apr
Costs/m ²	€ 0,04	€ 0,04
10 th treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	3 may	10-apr
Costs/m ²	€ 0,01	€ 0,01
11 th treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	12 may	16-apr
Costs/m ²	€ 0,01	€ 0,01
12 th treatment Enzicur /bycor 2 + 2 kg/ha= 400€/ha	22 may	23-apr
Costs/m ²	€ 0,04	€ 0,04
13 th treatment enzicur/bycor 2 + 2 kg/ha= 400€/ha		1 may
Costs/m ²		€ 0,04
14th treatment enzicur/bycor 2 + 2 kg/ha= 400€/ha		7 may
Costs/m ²		€ 0,04
15st treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha		13 may
Costs/m ²		€ 0,01
16 nd treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha		20 may
Costs/m ²		€ 0,01
Crop yield kg/m ²	39,2	37,4
Costs PPP's / m ²	€ 0,30	€ 0,40

Financial results Micothon in Cucumber against mildew:

Savings on PPP	€ 0,10
Hygher yield/m2: 1,8 kg x 0,30€	€ 0,54
Total savings with Micothon in 4,5 months	€ 0,64
Total savings m2 / year 12/4,5 x 0,64€	€ 1,71

Conclusion 4:
Micothon saving in mildew treatments in cucumbers is 17,100€ / ha / year



Conclusion 5:

A 4 ha greenhouse has a ROI in Micothon - 1 year

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Thus, the results of usage of high tech spraying machines Micothon are:

Result 1:

- Traditional system: reduction of spider mite eggs by 12 % after 20 days
- Micothon: reduction of spider mite eggs by 91 % after 20 days. So **79 % better** result.

Result 2:

The usage of Micothon helps to double the interval time between applications from **22 days till 44 days !!!**

Result 3:

Micothon saving in spidermite treatments in tomatoes is € 15.800,- / ha/ year

Result 4:

Micothon saving in mildew treatments in cucumbers is 17,100€ / ha / year

(Main) Result 5

A 4 ha greenhouse has a ROI in Micothon - 1 year!!!

Other advantages:

- Fewer treatments means higher customer appeal of the product
- Less often and automatic treatments save labor costs and mean less health risk for your employees