

## **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:

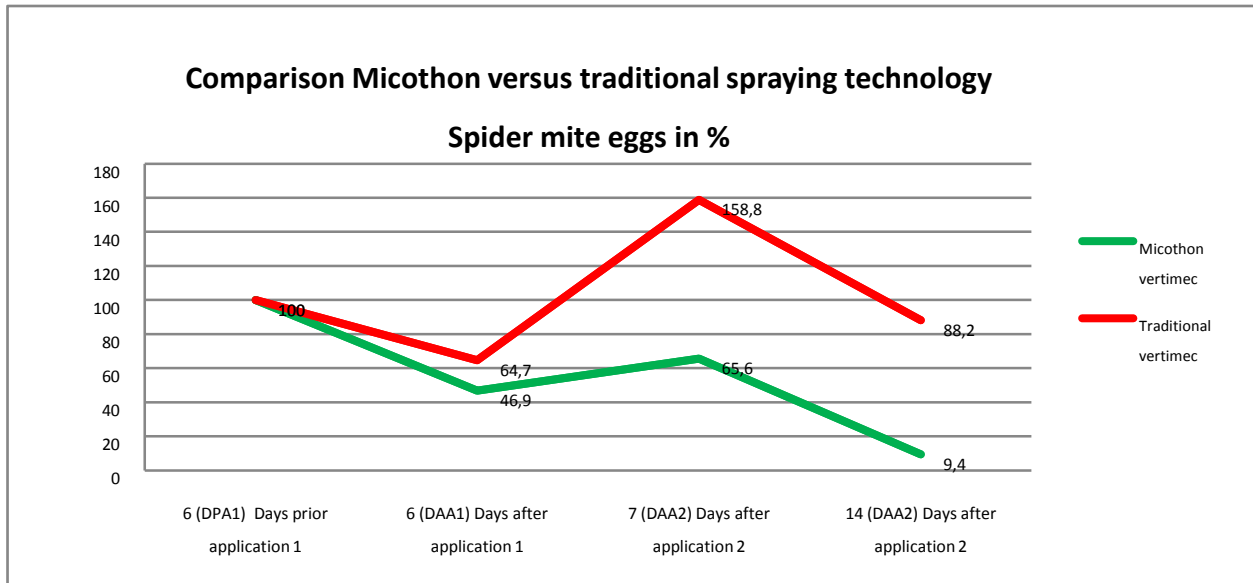
Page 1	Statement
Page 2	Test results spider mite treatment in roses
Page 3	Registration of number of treatments
Page 4	The economic importance of optimal result
Page 6	Test results spidermite treatment in Tomatoes
Page 8	Mildew spraying tests with Micothon in Cucumber spring 2009
Page 9	Return on investment
Page 10	Conclusions

## 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.

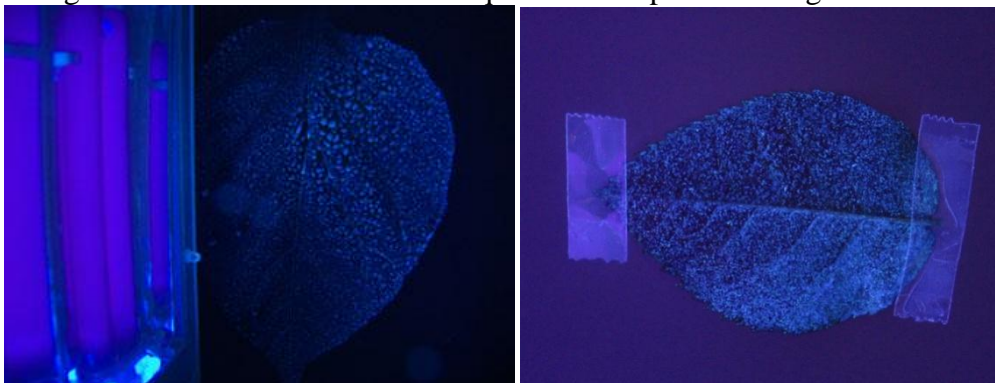
### Practical test 1: Egg calculation



### 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.

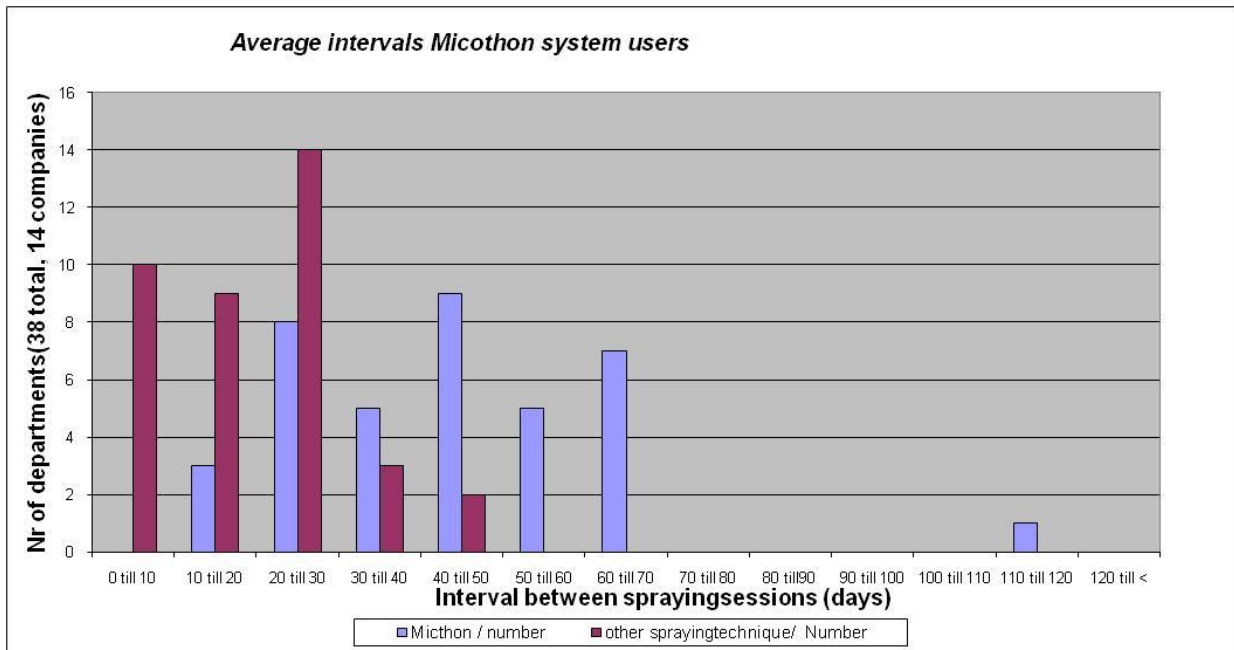


### Practical test 2: registration of number of treatments during 1 year

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
<b>Total nr of greenhouses</b>	<b>37</b>	<b>38</b>
	<b>Micothon</b>	<b>Traditional spraying machine</b>
<b>Average duration of the interval</b>	44	22



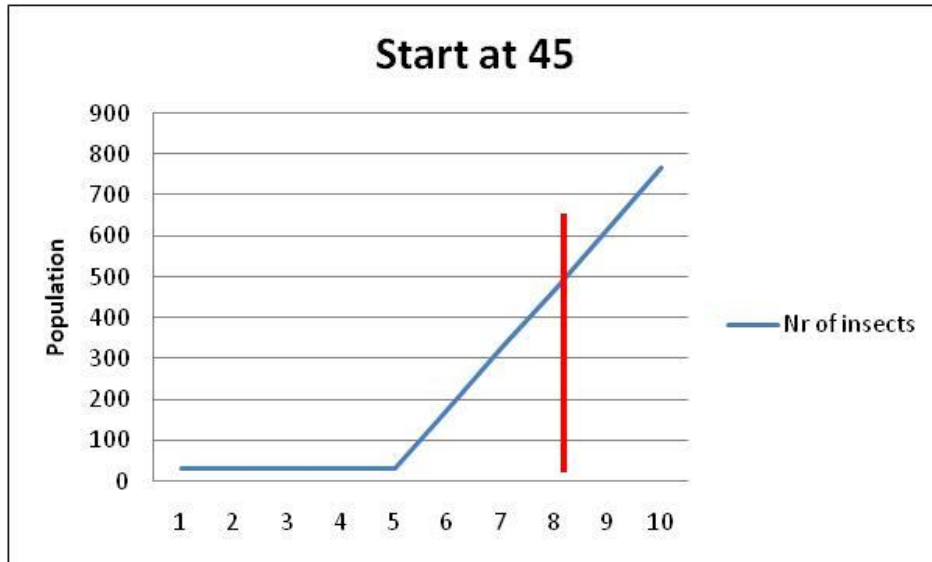
## Conclusion 2:

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

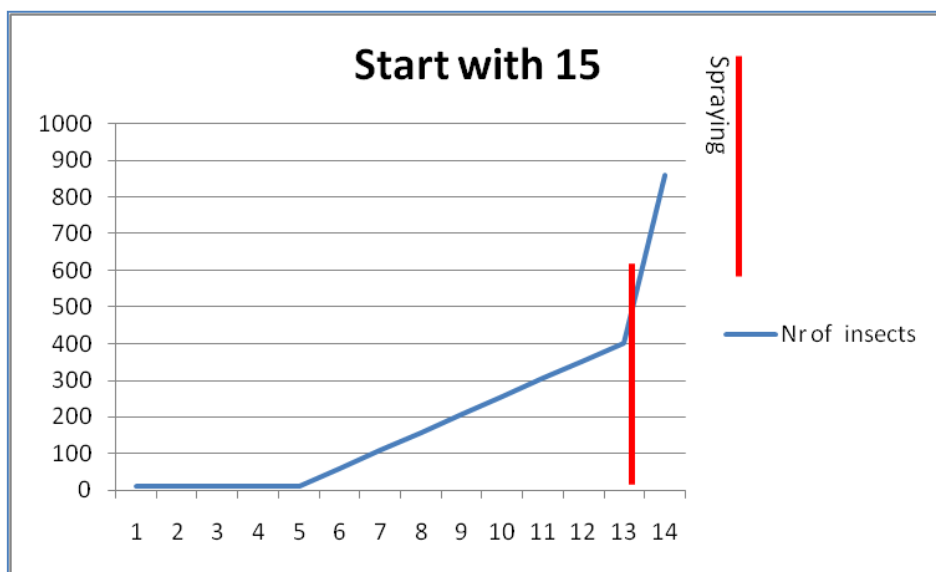
Assumptions: we make two successive treatments when there are 500 active pest units. A pest undergoes 3 stages in its development: egg (5 days), nymph (3 days), adult insect (6 days). An adult insect produces around 50 eggs, that is 8 eggs per day. The present model is based on real figures. The first 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.

# Micothon®



**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 m<sup>2</sup>. The area was divided in a right sector, and a left sector of 750 m<sup>2</sup> 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 m<sup>2</sup>,*

750 m<sup>2</sup> MICOTHON semi automatic sprayed,  
(2 x 250 m<sup>2</sup>=)500 m<sup>2</sup> buffer area,  
750 m<sup>2</sup> Semiautomatic sprayer WITHOUT AIR  
SUPPORT

*Crop: Tomatoes, rockwool on gutters.*

Tested pest: Spidermite

Controlled leaf surface 250 cm<sup>2</sup>

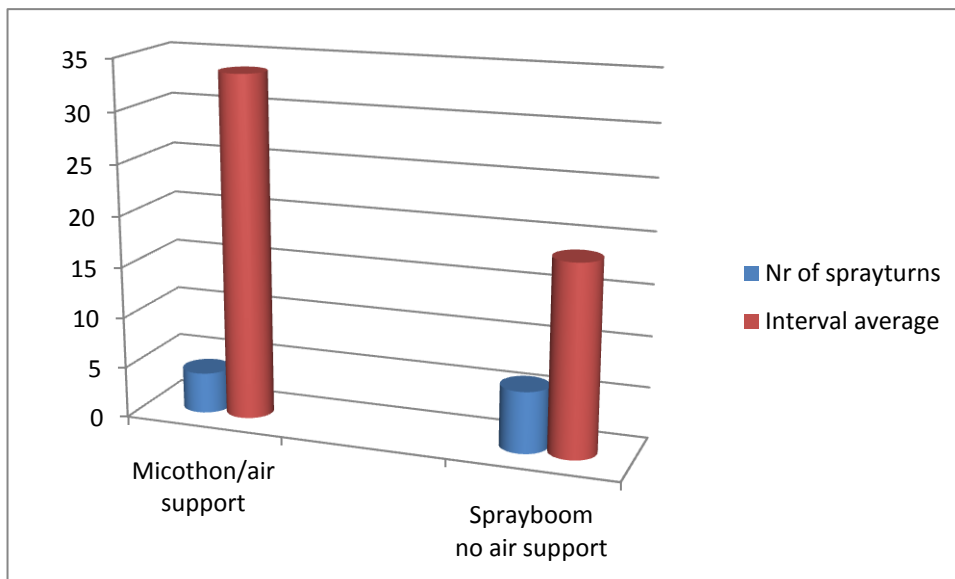
Note: test was specially for micothon, normally spidermite is biologically controlled.

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 <sup>2</sup>	€ 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 <sup>2</sup>	€ 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 <sup>2</sup>	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 <sup>2</sup>	€ 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

<b>Harvested crop kg/m2(year)</b>	<b>61,3</b>	<b>59,5</b>
	<b>Micothon/ air support</b>	<b>no air support</b>
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
<b>Total Micothon revenues / ha tomatoes/year</b>	<b>€ 15.800,00</b>

**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 m<sup>2</sup> sprayed with Micothon air support strayer,  
 10.000 m<sup>2</sup> with traditional semi automatic without airsupport;  
 test period: 15 jan-2june 2009 (3 crops.year)  
 Species: Sacha

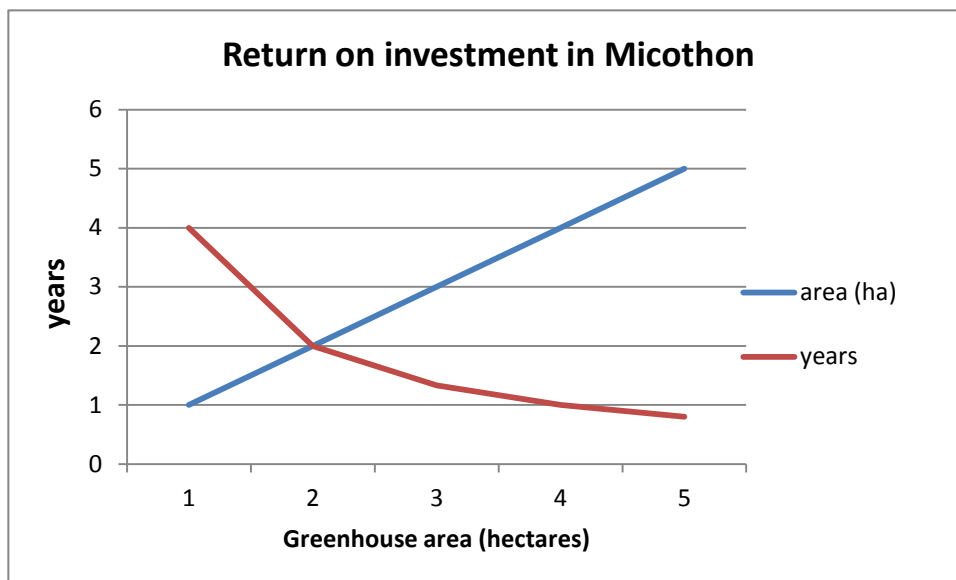
	Micothon air support	Vertical boom, No air support
1st treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	6-feb	6-feb
Costs/m <sup>2</sup>	€ 0,01	€ 0,01
2 nd treatment Flint 250 gr/ha (600 gr = 250\$) = 80€/ha	15-feb	13-feb
Costs/m <sup>2</sup>	€ 0,01	€ 0,01
3rd treatment Enzicur /bycor 2 + 2 kg/ha=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

# Micothon®

*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