

Application of NeemAzal-formulations against
chestnut leafminer
Cameraria ohridella (Lep., Gracillariidae)

H. Kleeberg, E. Hummel, Trifolio-M GmbH

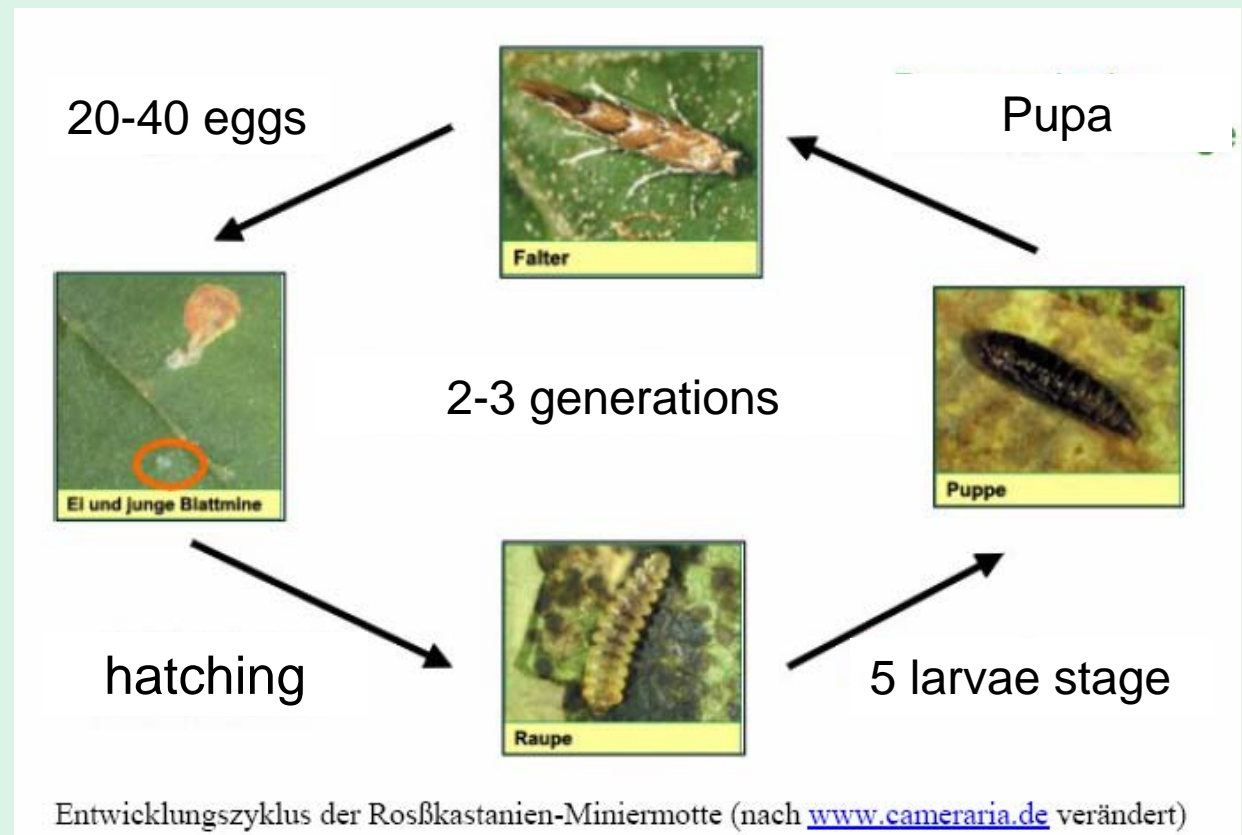
Cameraria ohridella (Lep., Gracillariidae) (nach Wallschläger und Gzik, 2004)



Falter von *Cameraria ohridella*



Larve von *Cameraria ohridella*



***Azadirachta indica* - Indian neem tree**



NeemAzal-T/S

**Registered since 1998 in EU
and Switzerland**

***New registration for the
next 10 years in Germany
and other countries***



Application technique

- spray: **NeemAzal-T/S**

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Application technique

- spray: **NeemAzal-T/S**

**Rosskastanienminiermotten können mit
NeemAzal-T/S bekämpft werden**

Cornelia Schweizer, Andermatt BIOCONTROL AG

Der Wirkungsgrad der NeemAzal-T/S-Behandlungen lag zwischen 77 und 91%, somit kann von einem guten Bekämpfungserfolg gegen die Rosskastanienminiermotte gesprochen werden.

Schlussfolgerungen

Der gute Bekämpfungserfolg der Rosskastanienminiermotte von 2004 konnte im 2005 bestätigt werden. Visuell sind deutliche Unterschiede zwischen den behandelten und un-behandelten Bäumen erkennbar. Da die Bewilligung durch das Bundesamt für Landwirtschaft versprochen wurde, sollte im kommenden Jahr für die Praxis eine erfolgreiche Bekämpfungsmöglichkeit der Rosskastanienminiermotte mit NeemAzal-T/S zur Verfügung stehen.

Application technique

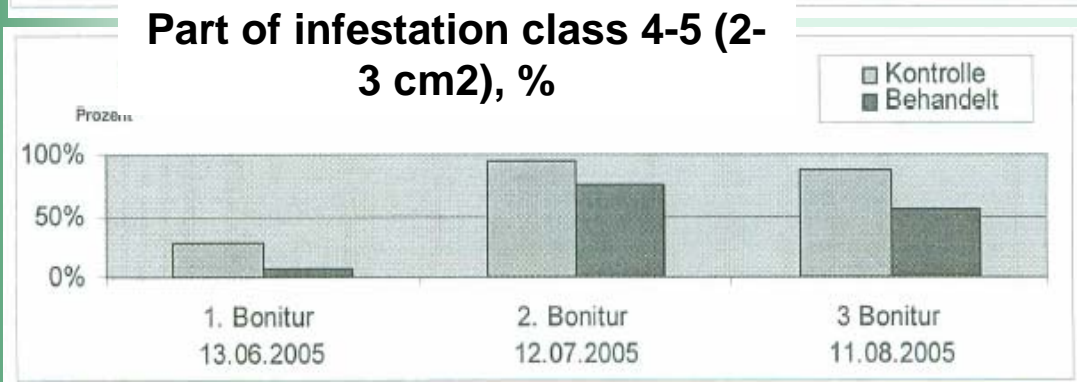
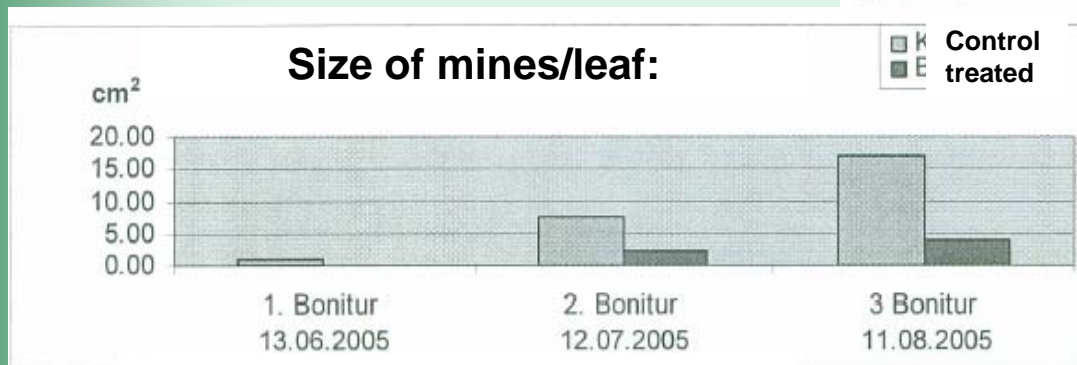
- spray: **NeemAzal-T/S**

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Bekämpfung der Rosskastanienminiermotte mit NeemAzal-T/S in Richterswil Süd (V_00096)

Bekämpfung der Rosskastanienminiermotte mit NeemAzal-T/S in Richterswil Süd (V_00096)



Assessment:	Efficacy, %
13.06.05	85%
12.07.05	69%
11.08.05	77%

Application technique

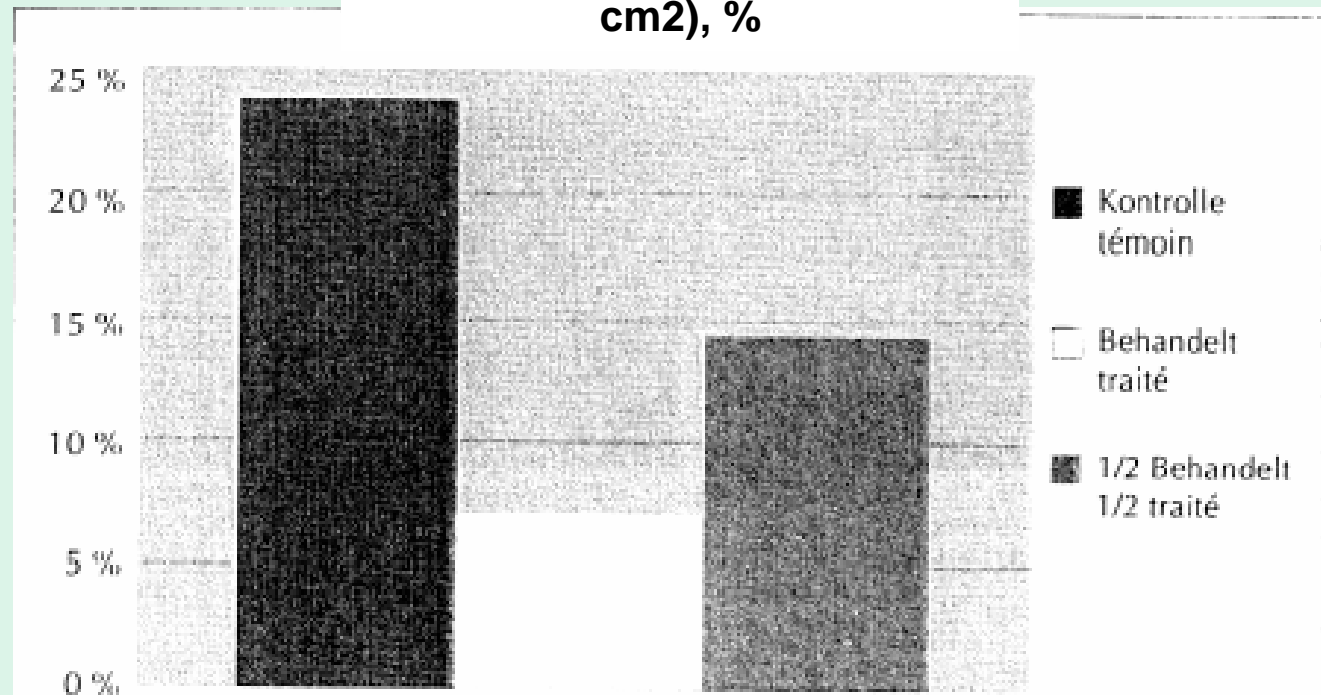
- Leaf spay: **NeemAzal-T/S**

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Bekämpfung der Roskastanienminiermotte
(*Cameraria ohridella*) mit NeemAzal

Cornelia Schweizer, Andermatt BIOCONTROL AG

Part of infested class 4-5 (2-3
cm²), %



Graphik 1: Prozentualer Anteil Blattminen der Befallsklasse 4 und 5 (= Minen > 2cm²) am 14.08.04 (3. Auszählung) im Versuch Schulhaus Wallisellen.

Graphique 1 : Pourcentage de mines de classe d'attaque 4 et 5 (= Mines > 2 cm²) le 14.08.04 (3ème évaluation) Essai Schulhaus Wallisellen

Application technique

- Leaf spay: **NeemAzal-T/S**

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FIRST RESULTS IN HUNGARY ON THE POSSIBILITIES OF CONTROLLING THE HORSE CHESTNUT LEAFMINER, *CAMERARIA OHRIDELLA* (LEPIDIPOTERA: GRACILLARIDAE) BY SPRAYING OF AN ENVIRONMENTAL-FRIENDLY PESTICID^{TS}

Gábor Szöcs¹, Klára Nemestóthy²,
Klára Saly³, Balázs Vályi³, & Edmund Hummel⁴

Results of the first trial showed that no mines could be detected on the treated trees 1 month after the treatment, while untreated control trees had, as an average, of 22.7 mines / 100 leaves. Two weeks later 1.5 mines were counted on the treated trees, while 23.2 mines on the control. Neither two nor seven weeks after the second treatment, no new mines were found on the treated trees, while the control trees hosted 231.0 and 283.2 mines / per 100 leaves. All these differences between treated and untreated trees proved to be statistically significant.

**Infestation
of 100 leafs**

Assessment	control	NeemAzal-T/S
30 DAT1	22,7	0
45 DAT1	23,2	1,5
32 DAT2	231-283	0 new mines

Application technique

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- **Stem injection:** NeemAzal-U (17% AzA), NeemAzal-E (2,5%), NeemProTree-7 (7% AzA)



Application technique

- **Stem injection: NeemAzal-U (17% AzA), NeemAzal-T (5% AzA)**

Use of new NeemAzal-Formulations against *Cameraria ohridella* (Lep., Gracillariidae) (Pavela, 2003)

Method of application:

- injector – prototype of Interprovincial Plastics Limited, Quebec
- A 6 cm deep hole (9,5mm) was drilled at the base of the tree (50-60 cm above ground) at a slightly downward angle.
- A bicycle air pump was connected to the tire valve and the injection tube was pressurized to 250 kPa.



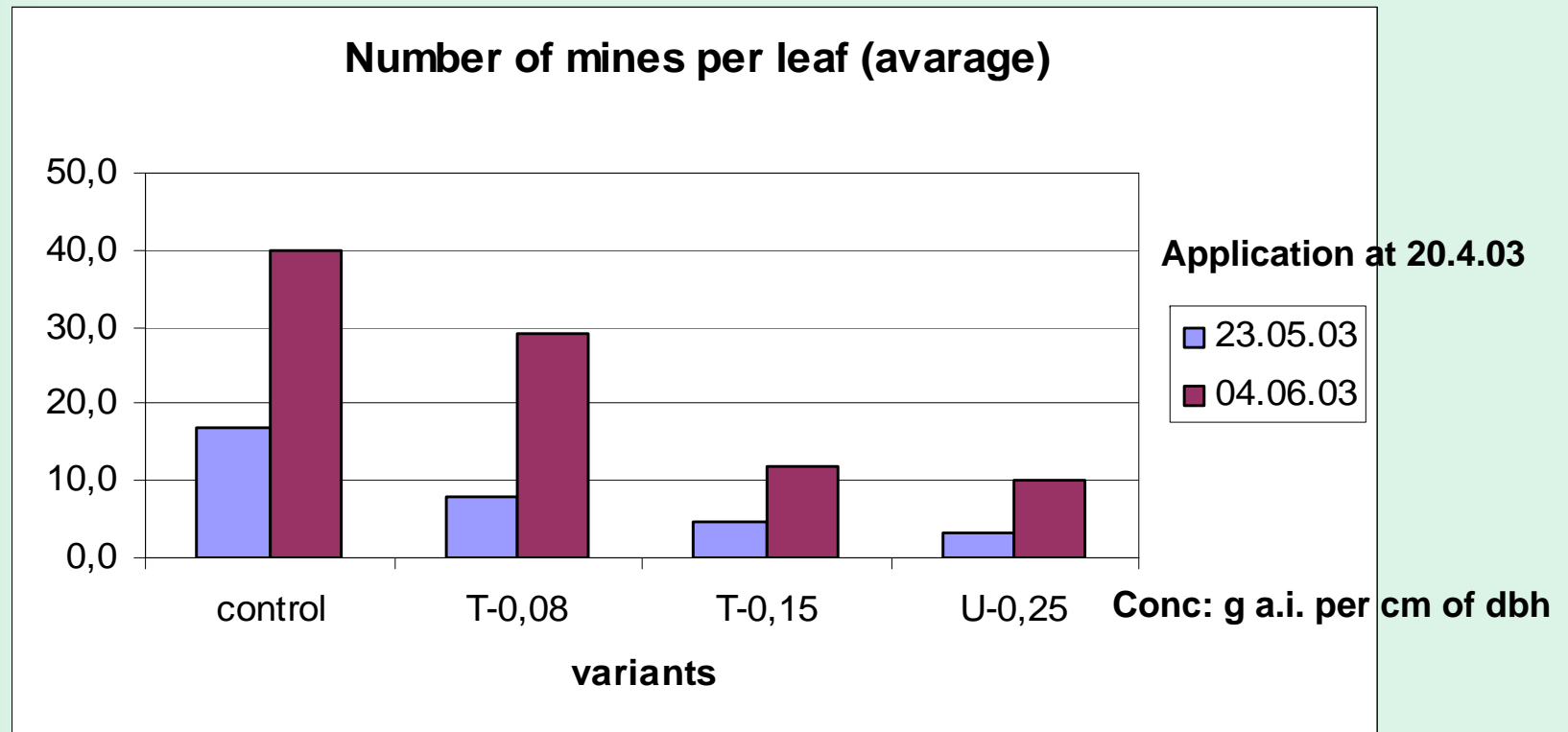
Injector TMP 2

Application technique

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- **Stem injection: NeemAzal-U (17% AzA), NeemAzal-T (5% AzA)**

Use of new NeemAzal-Formulations against *Cameraria ohridella* (Lep., Gracillariidae) (Pavela, 2003)

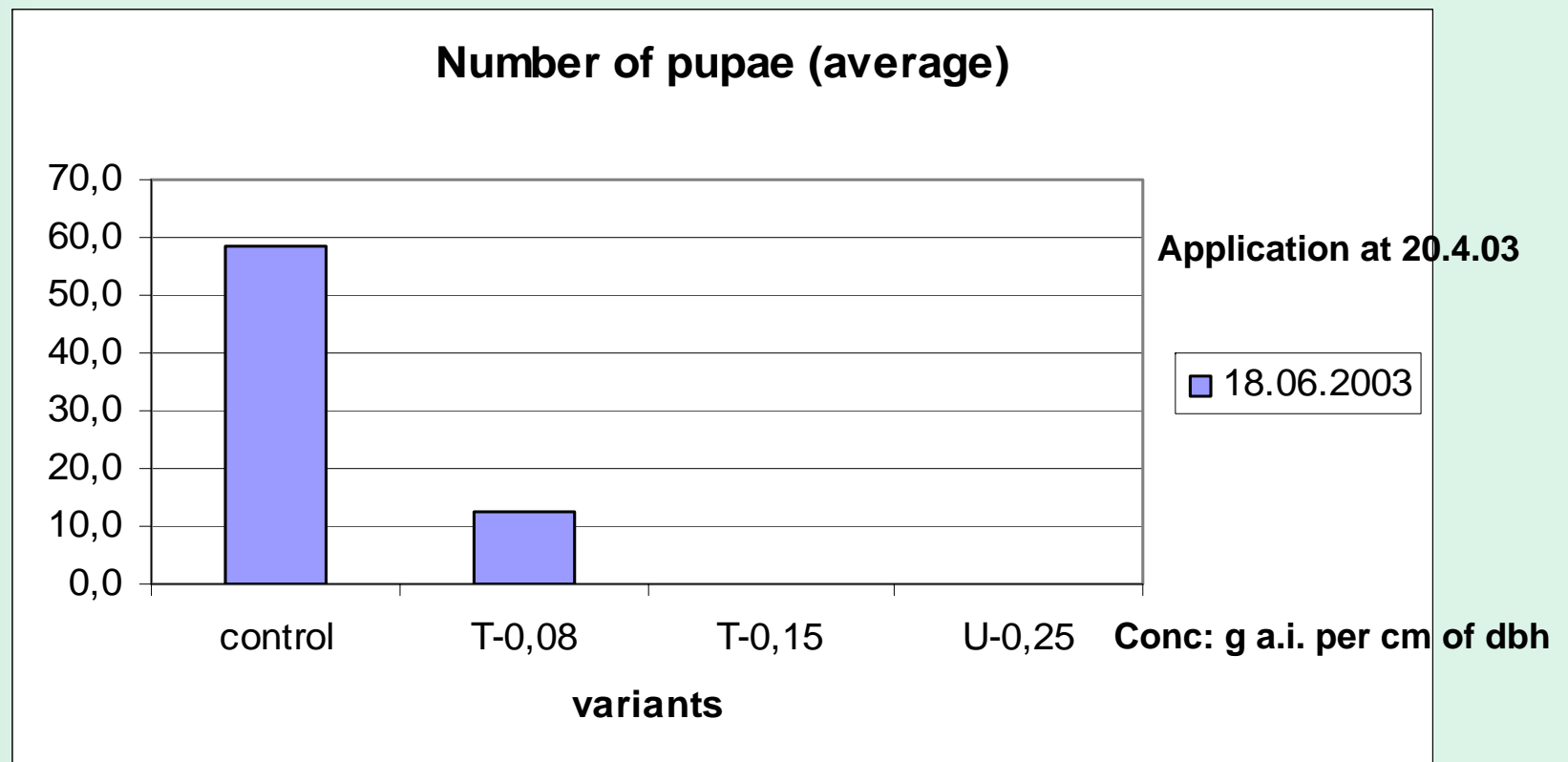


Application technique

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- **Stem injection: NeemAzal-U (17% AzA), NeemAzal-T (5% AzA)**

Use of new NeemAzal-Formulations against *Cameraria ohridella* (Lep., Gracillariidae) (Pavela, 2003)



Application technique

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- **Stem injection: NeemAzal-U (17% AzA), NeemAzal-T (5% AzA)**

Use of new NeemAzal-Formulations against *Cameraria ohridella* (Lep., Gracillariidae) (Pavela, 2003)

Application at 20.4.03



Control



NeemAzal-T 0,08



NeemAzal-T 0,15



NeemAzal-U 0,25

Application technique

- **Stem injection: NeemAzal-U (17% AzA), NeemAzal-T (5% AzA)**

Use of new NeemAzal-Formulations against *Cameraria ohridella* (Lep., Gracillariidae) (Pavela, 2003)

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Neemzal-U



Application technique

- Stem injection: NeemAzal-U (17% AzA)

Use of new NeemAzal-Formulations against *Cameraria ohridella* (Lep., Gracillariidae) (Pavela, 2005)



Application technique

- **Stem injection: NeemProTree-7 (7% AzA) (Waldstein, 2007)**

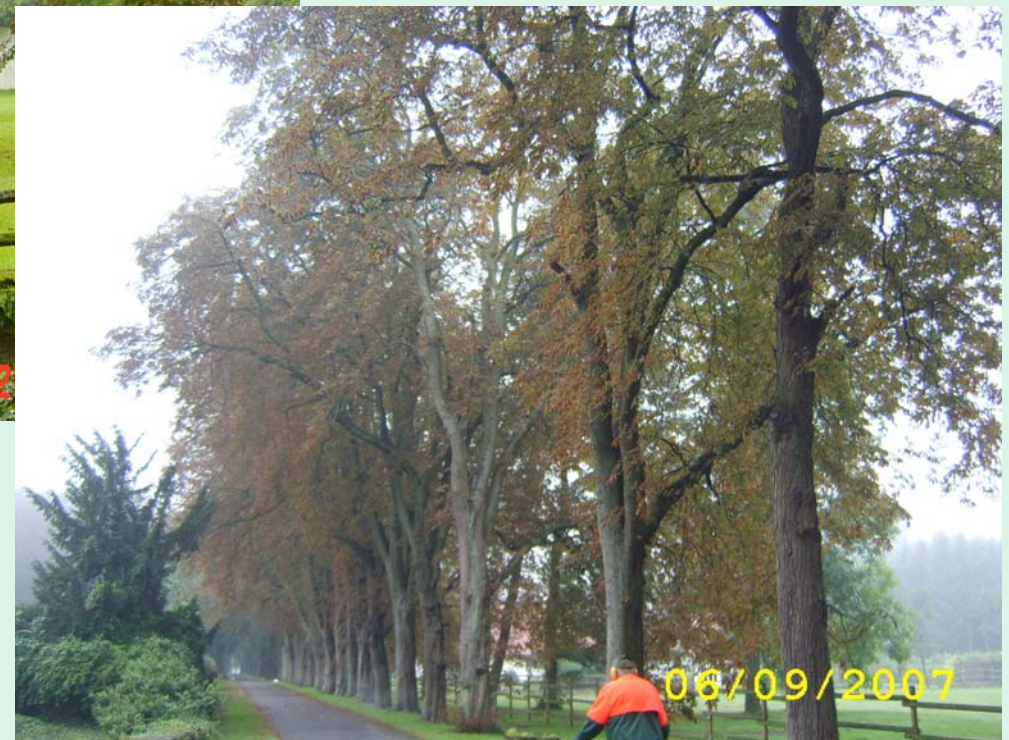
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Application at 11.5.07



Control

NeemProTree-7



Application technique

- **Stem injection:** best formulation - **NeemProTree-7 (7% AzA)**
best system – „Arborsystems“ (USA)

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Application technique

- **Stem injection: NeemAzal-U (17% AzA)(Hummel, 2004)**

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- Injector: Chem-Jet (Australien)
- all 12 cm drill (D: 4mm)
- Dose: 1 g AzA/10 cm BD
- aqueous solution



Application technique

- **Stem injection: NeemAzal-E (2,5% AzA)**

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RESEARCH ON SUITABILITY OF
NEEM-AZAL-E OR PIRECO AS A
SUBSTITUTE FOR LINDEN-APHID
CONTROL

Bomendienst

Rapport : Marc Lansink



Application technique

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- Stem injection: NeemAzal-E (2,5% AzA)

RESEARCH ON SUITABILITY OF NEEM-AZAL-E OR PIRECO AS A SUBSTITUTE FOR LINDEN-APHID CONTROL

Bomendienst

Rapport : Marc Lansink

3	86 cm	27 cm	6	Neem-Azal E pure	25 ml/punt	6 times 2 min
4	51 cm	16 cm	3	Neem-Azal E pure	25 ml/punt	3 times 1,5 min
5	76 cm	24 cm	5	Neem-Azal E 75% + water 25%	25 ml/punt	5 times 1,5 min

Explanation

The assimilation speed of Neem-Azal-E, pure or dissolved in water went well.

The assimilation speed varied between 1,5 till 3 minutes, despite a few stopped up squirts.

To check the normal assimilation speed the first tree is injected with just water. Full assimilation took 2,5 to 3 minutes. Tree number 10 was an exception, assimilation of 50% of the product took 6 minutes. Further assimilation didn't take place. No probable cause was found for different result for tree nr. 10.

Application technique

- Stem injection: NeemAzal-E (2,5% AzA)

RESEARCH ON SUITABILITY OF NEEM-AZAL-E OR PIRECO AS A SUBSTITUTE FOR LINDEN-APHID CONTROL

Bomendienst

Rapport : Marc Lansink

Conclusions:

EFFECTIVITY

After week 35 (end of august) week differences become visible in treated and untreated trees. Untreated trees have more lime-aphids en lots more sooty-dew. Treatment with stem-injections seems to have effect, the trees don't get aphids-free. The highest level treatment with Neem-Azal-E gives the best results.

Application technique

- **Stem injection: NeemAzal-E (2,5% AzA)**

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RESEARCH ON SUITABILITY OF
NEEM-AZAL-E OR PIRECO AS A
SUBSTITUTE FOR LINDEN-APHID
CONTROL

Bomendienst

Rapport : Marc Lansink

Conclusions:

FYTOTOXITY

No signs of fytotoxicity were found during the test. Leaking injection-resevoirs gave a dark colour on the bark, this is still a little visable. Dying bast as result of leaking product has not been notices during the last vist on september the 19 th.

Application technique

- **Stem injection:** best formulation - **NeemProTree-7 (7% AzA)**
best system – „Arborsystems“ (USA)

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Problems:



Foto: PSA Berlin

Application technique

- Stem injection

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Translocation and Efficacy of a Neem-Based Insecticide in Lodgepole Pine Using *Ips pini* (Coleoptera: Scolytidae) as an Indicator Species

Authors: Duthie-Holt, Marnie A.; Borden, John H.; Rankin, Leo J.

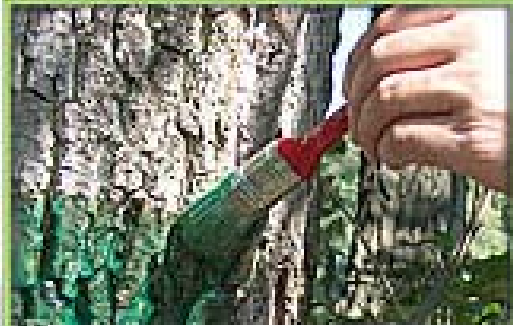
Source: [Journal of Economic Entomology](#), Volume 92, Number 1, February 1999, pp. 180-186(7)

that the active ingredients translocated at least 9 m up the bole and persisted for at least 6 wk. Numbers of emergence holes also were significantly reduced by 89, 88, and 63% at 3, 9, and 15 m, suggesting that the translocation extended beyond 9 m. Neem treatment had no impact on gallery construction and attack density, but significantly reduced the number of progeny per egg gallery. Unlike the currently used systemic arsenical, neem extracts would pose no toxicity to vertebrates and would have a short residual activity in the environment. There would be little chance of resistance developing because of neem's multiple modes of action and the fact that very few infested trees in a given year would ever be treated.

Application technique

- Stem paint by brush: **NeemAzal-T/S (1% AzA)**

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M. Lehmann, LELF - Pflanzenschutzdienst

Roskastanienminiermotte (*Cameraria ohridella*) – Bekämpfungsversuch 2001

Results: number of mines/leaf and infected leaf area

Application: 30.4.2001

Control

NeemAzal in sticky
(10% as, 15 ml/tree)

Vers	Datum	Auswertung	a (UK)	NeemAzal in sticky (10% as, 15 ml/tree)		
				c absolut	rel. zu UK	
2	25.05.	mines/leaf	1,5	0,2	13,3 %	3,5 WAT
	18.06.	mines/leaf	13,5	5,4	40,0 %	7 WAT
		Infected area	18,5 %	7,3 %	38,5 %	
	24.09.	Infected area	89 %	42 %	47,2 %	5 MAT

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Thank you very much for your attention!