

# **NeemAzal-T/S<sup>TM</sup>**

**Plant extract from kernels of the tropical Neem tree**

## **Instructions for the use against sucking and biting pest organisms**

**registered applications in Germany:**

**in the greenhouse -**

- Aphids - Thrips - Leaf Miners - White Flies - Spider Mites

**in the field -**

- Apple Ermine Moth - Colorado Potato Beetle -

- Elder Bush Aphid - Rosy Apple Aphid - White Fly -

- Winter Moth - several sucking pest insects - Spider Mite -

**selective effects on target organisms**

**harmless for most beneficials**

**non toxic to honey bees**

**safe to aquatic organisms**

**no waiting period**

## Mode of action

**NeemAzal-T/S™** contains **NeemAzal**, the purified active ingredient of the kernel seeds of the tropical Neem tree *Azadirachta indica* A. Juss. The active substance penetrates the leaves and is distributed partially systemic in the plant; the pest insects take it up orally upon feeding (sucking or biting).

**NeemAzal-T/S™** has a special mode of action. It stops the insect feeding and plant damaging activity. However, a „knock down“ effect should not be expected. Within a few hours after application of **NeemAzal-T/S™** pest insects become inactive and after a few days the population does not develop any longer and collapses.

After the treatment with **NeemAzal-T/S™** **larvae** react with feeding and moulting inhibition and mortality; **adult** (beetle) show feeding inhibition, infertility and to a lesser degree mortality.

As a result of this comparatively slow „insectistatic“ mode of action of **Neem-Azal-T/S™** a final assessment of the treatment should be done 7-10 days after application under practical conditions. The number of dead pest insects is not necessarily an evaluation criterion. For the assessment the following criteria are appropriate: loss of leaf mass, damage to leaves, formation of honey dew, yield of crops, development of the pest population, positive effects on beneficials.

The success of the application with **NeemAzal-T/S™** depends on the progress of the pest infestation and adequate timing of the treatment.

In the case of a temporary infestation and synchronous development of pest populations one application per generation/season is generally sufficient (under European climatic conditions, usually one or two generations, for example: appearance of fundatrices of the Rosy Apple Aphid *Dysaphis plantaginea*, first adults of Elder Bush Aphid *Aphis sambuci* (Hom., Aphididae), first young larvae of Colorado Beetles *Leptinotarsa decemlineata*, beginning of flight of Cockchafer *Melolontha* sp.).

In case of a permanent infestation (several generations - Aphids, Thrips, White Flies, Spider Mites etc.) repetitive applications are required. The interval between the treatments is 5-7 or 10-14 days and depends on the climatic conditions and infestation pressure.

**NeemAzal-T/S™** is harmless for most beneficials - they are an important factor in the control of the remainder of the pest population. **NeemAzal-T/S™** can favorably be combined with the use of beneficials in the plant protection system.

## Preparation of the spraying solution, application

**NeemAzal-T/S™** is used as a 0,3 to 0,5 % aqueous solution, at a rate of 1,5-3 l/ha of cultivated area, usually 300 to 1000 l of spraying solution are applied per hectare (see table). Complete wetting of the plants with the spraying solution is essential for a successful application. The treatment should be repeated if rainfall follows the application within 8 hours.

Fill spray tank with the required amount of water and add **NeemAzal-T/S™** under thorough stirring. Use the solution on the day of preparation. Do not prepare more sprayable solution than necessary.

# Phytotoxicity information

**NeemAzal-T/S™** was tested with many plants under outdoor and greenhouse conditions and shows generally good plant compatibility during the warm season. The compatibility of **NeemAzal-T/S™** depends on variety and species of plant.

In **ornamentals** the following plants react on **NeemAzal-T/S™**-treatment with:

good leaf and blossom compatibility - *Antirrhinum majus*, *Acalypha hispida*, *Argyranthemum frutescens*, *Astericus*, Begonia-hybrids, *Bidens ferulifolius*, *Brachycome*, chrysanthema (Merced, Bronze Arola, Kory), *Celosia cristata*, *Convolvulus sabatius*, *Coreopsis* (girls eye), *Dendranthema grandiflorum*, *D. indicum*, *Diascia*, *Euryops chrysanthemoides*, *Fuchsia*, *F.*-hybrids, *Gazania splendens*, *Gerbera jamesonii*, *Glechoma*, *Helichrysum petiolare*, *Kalanchoe* (Boston), *Lantana-Camara*-hybrids, *Lobelia*, *L. speciosa*, *Manettia bicolor*, *Mentha*, Carnations (Aristo), Slipperwort, Pelargonien, *Petunia*, *Pilea microphylla*, Roses (Komet), *Rudbeckia*, *Sanvitalia procumbens*, *Scaevola*, *Sutera*, African marigold (yellow), *Torenia fournieri*, *Verbena* (Tapien blue) (Sunvop (P),

good leaf compatibility - *Agerathum houstonianum*, *Alonsoa*, *Alyssum*, *Amaranthus*, *Calceolaria* hybrids, *Callistephus chinensis*, *Calocephalus brownii*, *Centaurea*, *Cestrum*, *Clarkia*, *Cleome*, *Coleus*, *Cosmos*, *Cuphea*, *Cynara scolymus*, *Dahlia*, *Dianthus barbatus*, *Dimorphoteca*, *Eucalyptus*, *Eustoma grandiflorum*, *Ficus*, *Felicia*, *Gazania*, *Gnaphalium*, *Helianthus*, *Heliotropium arborescens*, *Iresine lindenii*, *I. herbstii*, *Kochia*, *Lavatera*, *Limonium*, *Lotus*, *Lysimachia*, *Melampodium paludosum*, *Mesembryanthemum crystallinum*, *Nicotiana*, *Nigellia*, *Pennisetum*, *Penstemon*, *Plectranthus fruticosus*, *Polygonium*, *Portulaca*, *Ricinus*, *Salvia farinacea*, *Saintpaulia* (Miho io), *Senecio*, *Serenoa*, *Streptocarpus*, *Tanacetum*, *Tithonia*, *Trachelium*, *Viola*, *Veronica*, *Zinnia*,

blossom damages - *Begonia* semperflorens hybrids, *Chrysanthema* (Deep luv), *Euphorbia pulcherrima* (Peter star, Cortez), *Gerbera* (Pretty red, Sigma, Luciana), *Impatiens* Neu-Guinea hybrids, *Impatiens walleriana*, Pelargonium-Peltatum-hybrid, P.-Zonale-hybrids, *Solanum rantonnetti*, *Saintpaulia* (Miho io), African marigold, Verbenen (individual sorts),

leaf damages - *Abutilon* hybrids, *Cestrum*, *Datura*, *Euphorbia pulcherrima*, *Impatiens* Neu-Guinea hybrids, *Impatiens walleriana*, passion flower, *Solanum rantonnetti*, Roses (Papa Meilland, White Noblesse, Saphir, Ducat, Eveline, Alina, Baronesse, Lola, Black Magic, Noblesse, Roulette, Funky Jazz, Arabia).

In **orchards** serious plant toxicity has been observed in the case of pear varieties 'Conference', 'Alexander Lukas', 'Bristol Cross', 'Comice', 'Guyot', 'HW 606', 'Illinois 13 bars 83 Maxi', 'Lectier', 'Trevoux', 'Winter dechant'.

In the case of plant species that normally react insensitive, individual varieties can exhibit incompatibilities. This has occasionally been observed with the apple variety 'Gala'. Because of the season dependent culture conditions and the many species and varieties of plants, we can not make an obligatory statement about the compatibility of **NeemAzal-T/S™**. We recommend to perform sensitivity tests with a few plants or a some leaves in the respective stadium of growth 3-5 days before treatment of larger areas.

This information about possible plant damaging effects of **NeemAzal-T/S™** corresponds to experience under practical conditions and is not binding. It can not be excluded that damage can occur in cases with plants with good compatibility.

# Safety measures

Avoid every unnecessary contact with the product. Abuse can damage your health. Keep away from children. Follow the general protective measures: keep away from food, beverages and feed. Do not eat, drink or smoke at work. Avoid skin contact. In rare cases of especially sensitive persons **NeemAzal-T/S™** may lead to reversible skin or eye irritations. In the case of contact wash with plenty of water.

<b>Waiting period:</b>	not required
<b>Honey Bees:</b>	not dangerous under the recommended application conditions (B4)
<b>Beneficials:</b>	harmful for populations of <i>Episyrphus balteatus</i> (Diptera), harmless for populations of <i>Typhlodromus pyri</i> (Acarina), <i>Poecilius cupreus</i> (Coleoptera), <i>Coccinella septempunctata</i> (Coleoptera), <i>Aphidius rhopalosiphi</i> (Hymenoptera)
<b>Water protection:</b>	do not dispose the product or remains thereof into water
<b>Waste disposal:</b>	recycle empty and cleaned packages
<b>Stability:</b>	two years after date of manufacture, store cool and dry! Storage below 10°C can lead to precipitations in the product. The precipitate can be re-dissolved by warming up to approx. 20-30° C without loss of activity.
<b>Active substance:</b>	1% AzadirachtinA (10 g/liter) corresponding to max. 4% <b>NeemAzal™</b> (natural Neem-Kernel-Extract).
<b>Formulation:</b>	plant oil and surfactants based on renewable natural products.
<b>Other references:</b>	since the application of the product is beyond our influence, we accept liability only for constant quality.

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# Table of registered application areas (Germany)

Pest (maximum number * of applications)	Area of application: culture, (growth stage)	Application rate and/or concentra- tion of NeemAzal- T/S (amount of spray solution)	Time of application	Remarks
<b>Aphids (2)</b> <b>Leaf Miners (4)</b> <b>Spider Mites (2)</b> <b>Thrips (2)</b> <b>White Flies (2)</b>	<b>Ornamentals (greenhouse)</b>	0,3 to 0,5 % (30 to 100 ml spraying solution/ m <sup>2</sup> )	Beginning of infestation	Spray, period between applications 7-14 days
<b>Colorado potato beetle (2)</b>	<b>Field:</b> Potatoes	1,5-2,5 l/ha (300-500 l/ha)	5 days after deposition of more than 10 egg masses on 50 plants	} Spray
<b>Winter Moth, larval stage L 1 to L 2 (1)</b>	<b>Orchard</b> (except for strawberries), from plant stage: Red bud to Balloon <b>Ornamentals (field):</b>	1,5 l/ha and each 1 m of plant height	Beginning of infestation with larvae	
<b>Rosy Apple Aphid (1)</b>	<b>Orchard:</b> Apples (from plant stage: Red bud to Balloon, majority of the blossoms in the balloon stage)		Beginning of infestation or occurrence of fundatrices	
<b>Elder Bush Aphid (1)</b>	<b>Orchard:</b> Elder (before blooming)		} Beginning of infestation	
<b>Apple Ermine Moth larval stage L1-L2 (1)</b>	<b>Ornamentals (field):</b>			
<b>Sucking pest insects (2)</b>	<b>Ornamentals (field):</b>			Spray, period between applications 7-14 days
<b>Spider Mites (2)</b>	<b>Ornamentals (field):</b>	} 0,3 ml/m <sup>2</sup>	Spray, period between applications 7-14 days	
<b>White Flies (2)</b>	<b>Ornamentals (field):</b>		Spray, period between applications 7-14 days	

\* - has to be determined under local conditions of cultivation and pest incidence!