Andermatt Biocontrol – your partner for sustainable agriculture since 30 years

The world-wide demand for environmental friendly and residue-free food production is increasing. Since 30 years it has been the goal of Andermatt Biocontrol to replace chemical pesticides with good biological alternatives such as microbial products and beneficial organisms.

Andermatt Biocontrol and its affiliated companies have key expertise in the development of new products based on baculoviruses, microorganisms and beneficial insects. Our outstanding standards of quality and our permanent focus on customer’s satisfaction mean that we continue to ensure the high Swiss quality performance of our products. With the aid of our own research and development departments we are constantly improving our products and knowhow. We are distributing our products as well as a range of selected high-quality trade products all over the world to more than 150 distributors. We are absolutely convinced about the advantages of biocontrol and would be pleased to demonstrate our products and solutions to you and your clients.
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TUTAVIR

Novel granulovirus product for the integrated control of Tuta absoluta.

**Baculoviruses**
- Characteristics of baculoviruses 4
- Our baculovirus products 5
- Madex 6
- Madex Twin 7
- Capex 8
- Cryptex 9
- Helicovex 10
- Littovir 11
- Spexit 12
- Loopex 13
- Tutavir 14
- Abietiv 15
- Lymantria dispar MNPV 15

**Beauveria bassiana**
- Bb-Protec 16

**Bio-Fungicides**
- AmyProtec 42 17
- T-77 18

**Biostimulants / Bioinnoculants**
- RhizoVital 42 / C5 / P45 19
- T-Gro 20
- T-Gro Easy-Flow 21
- Rhizobia for soybean and alfalfa 22

**Monitoring systems / Mass trapping**
- Drosal Pro 23
- Drosalure 23
- Rebell – Coloured sticky traps 24
- aPhinity EAB 24
- PheroNorm 25

**Rodent control**
- topcat – The vole trap. 26
- topsnap – The clever mousetrap. 26
- standby – The vole fence. 26

**Macroorganisms**
- Beneficial insects and insect feed 27
- Entomopathogenic nematodes 28

**Diverse products**
- Fenicur 29
- Pyrethrum FS 29
- Quassan 29

**About us**
- Structure of the Andermatt Holding 31
- Subsidiaries of Andermatt Biocontrol 32
- Your technical support 34
Characteristics of baculoviruses

What are baculoviruses?
Baculoviruses are natural pathogens of insects, mainly lepidopteran species. Baculoviruses consist of one or several virions, that contain the viral DNA. These virions are encapsulated in a protein occlusion body, which protects the virus from destructive influences in the environment. Baculoviruses can be separated into two genera: granulovirus (GV) and nucleopolyhedrovirus (NPV), both of which may be used as natural insecticides.

Baculoviruses are safe
Due to the narrow host range of baculoviruses, beneficial insects such as bees, bumble bees, predatory mites, and parasitoids are not harmed. Baculoviruses are safe for the environment and do not affect aquatic species, birds, mammals, and humans. Baculoviruses do not produce any toxins or secondary compounds.

How do baculoviruses work?
Baculoviruses must be ingested by the insect larvae. Once in the midgut of the host, the protein capsules of the baculoviruses are dissolved and release virions, which infect the insect’s midgut cells. The multiplication of virions within infected cells cause the infection to spread inside the host. A few days later, the larvae die and release millions of new viruses into the environment.
Our baculovirus products

We offer a large number of plant protection products based on baculoviruses against a range of different pest insects.

Our baculoviruses are formulated into a stable and highly concentrated product, which is ready-to-use and can easily be combined with other plant protection products.

Our baculovirus products are manufactured in our production facilities in Switzerland or Canada. Every produced batch undergoes a systematic bioassay process. The high virulence of each batch is tested against a standard reference. Each batch is proven to be free of relevant human pathogens and proven not to exceed microbial contamination thresholds, as defined by the directives of plant protection registrations in each country.

Our baculovirus products are approved and listed for the use in organic farming in many countries. We received certificates from the Research Institute of Organic Agriculture (FiBL), OMRI, SGS, BFA, BioGro New Zealand, and others.

We also offer unformulated raw material.

CHARACTERISTICS

- Highly effective pest control
- Zero residues
- Unique mode of action
- Safe for user
- Harmless to beneficials and the environment
MADEX

Pest
Codling moth (Cydia pomonella) is one of the world’s most serious pests in apples and pears. The pest is able to adapt to various climatic conditions and therefore the management needs to be adjusted to its local developmental characteristics.

Product
Madex contains a Cydia pomonella granulovirus and offers highly effective control of codling moth. Due to the alternative mode of action the product is an excellent tool for the sustainable management of the codling moth.

Madex was the first commercially available product based on baculovirus and has been successfully applied for 30 years. Madex can be used for organic production, but is also an effective product for use in IPM and conventional control programs against codling moth.

Madex Max, Madex Plus, Madex Top
The Madex line includes several products based on different CpGV isolates. They provide the necessary tools for a successful prevention and management of CpGV-resistant codling moth populations.

PRODUCT-FACTS

Against
Codling moth (Cydia pomonella)

Active ingredient
Cydia pomonella granulovirus (CpGV)

Formulation type
Suspension concentrate

Concentration
$3 \times 10^{13}$ GV/liter

Standard dosage
100 ml per ha

Crops
Apple, pear, walnuts, quinces, apricots, peaches, almonds, kakis, medlars, oranges and others
MADEX TWIN

Pest
Oriental fruit moth (Grapholita molesta) is a serious pest in stone fruit. It frequently migrates to pome fruit orchards in the late season, where it can cause substantial fruit damage before harvest. Oriental fruit moth is able to complete its entire life cycle on alternative hosts such as apple, cherry, plum and quinces.

Product
Madex Twin provides a highly specific and residue-free combined control of oriental fruit moth and codling moth. Madex Twin is the right choice for commercial pome fruit orchards with Oriental fruit moth and codling moth infection and also offers a new biological control option of Oriental fruit moth in stone fruit.

PRODUCT-FACTS

Against
Oriental fruit moth and codling moth (Grapholita molesta, Cydia pomonella)

Active ingredient
Cydia pomonella granulovirus (CpGV)

Formulation type
Suspension concentrate

Concentration
$3 \times 10^{13}$ GV/liter

Standard dosage
100 ml per ha

Crops
Peach, nectarine, apple, pear, quince, apricot, almond, cherry, plum and walnut

OMRI Listed
For organic use
**CAPEX**

**Pest**
Summer fruit tortrix (*Adoxophyes orana*) is present in Europe and Asia. The polyphagous caterpillars feed on leaves, buds and fruits, and can cause serious damage to various crops. In Asia, this species is a pest in tea plantations.

**Product**
Capex offers highly effective control of summer fruit tortrix populations. The infected larvae are killed in the last larval instar. On apples, the early application of Capex on overwintering larvae effectively reduces pest damage.

Infected larvae produce large amounts of new viruses, providing a high infection potential for the next generation. Capex can be combined with mating disruption and other insecticides.

**PRODUCT-FACTS**

**Against**
Summer fruit tortrix (*Adoxophyes orana*)

**Active ingredient**
*Adoxophyes orana* granulovirus (*AoGV*)

**Formulation type**
Suspension concentrate

**Concentration**
$5 \times 10^{13}$ GV/liter

**Standard dosage**
100 ml per ha

**Crops**
Apple, pear, rose, plum, cherry, apricot, peach, currant, gooseberry and others
**CRYPTEX**

**Pest**
The larvae of the False codling moth (*Thaumatotibia leucotreta*) are extremely polyphagous. They are responsible for major damage to citrus in Southern Africa, and to a large number of other crops in Sub-Saharan Africa. False codling moth has recently been reported to cause damage in avocado, pomegranates and citrus crops in Israel.

**Product**
Cryptex contains an isolate of *Cryptophlebia leucotreta* granulovirus (CrleGV) which was isolated from a population of false codling moth originating in South Africa.

Cryptex offers highly effective control of false codling moth populations. Cryptex can be applied without additives such as molasses or sugar and will prevent damage within the first year of application. Moreover, the use of Cryptex has a long term control effect on false codling moth populations if applied early in the season.

**PRODUCT-FACTS**

<table>
<thead>
<tr>
<th><strong>Against</strong></th>
<th>False codling moth (<em>Thaumatotibia leucotreta</em>, formerly: <em>Cryptophlebia leucotreta</em>)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active ingredient</strong></td>
<td><em>Cryptophlebia leucotreta</em> granulovirus (CrleGV)</td>
</tr>
<tr>
<td><strong>Formulation type</strong></td>
<td>Suspension concentrate</td>
</tr>
<tr>
<td><strong>Concentration</strong></td>
<td>$2 \times 10^{13}$ GV/liter</td>
</tr>
<tr>
<td><strong>Standard dosage</strong></td>
<td>200 ml per ha</td>
</tr>
<tr>
<td><strong>Crops</strong></td>
<td>Citrus, avocado, pomegranates, bean, cotton, grape, macadamia, maize, peppers, stone fruits, tea and many others</td>
</tr>
</tbody>
</table>
HELICOVEX

Pest
The cotton bollworm (Helicoverpa armigera) and other Helicoverpa species belong to the most damaging pests of economic importance on a global level. They are predominant in a large range of open-field crops, but also cause severe damage in greenhouses. They are known to gradually develop resistance against several chemical substances. The larvae are extremely polyphagous and feed on many different plant structures including stems, leaves, flower heads and fruits. Moths are known to migrate over long distances.

Product
Helicovex is a tool for efficient and sustainable control of the cotton bollworm and other Helicoverpa species, such as Helicoverpa zea or Helicoverpa punctigera. The virus kills young instars (L1 – L3) and infects older larvae. Hatching larvae can already get infected by feeding on their own egg-shells. Considering its favourable toxicological and residue-free profile and the high compatibility with other products, Helicovex is well suited for organic production, integrated plant protection strategies and resistance management programs.

PRODUCT-FACTS

Against
Cotton bollworm (Helicoverpa armigera), Corn earworm (Helicoverpa zea) and other Helicoverpa species

Active ingredient
Helicoverpa armigera nucleopolyhedrovirus (HearNPV)

Formulation type
Suspension concentrate

Concentration
$7.5 \times 10^{12}$ NPV/liter

Standard dosage
50 – 200 ml per ha (depending on the crop)

Crops
Soybean, tomato, sweet pepper, sweet corn, cotton, bean, tobacco, lettuce, sunflower and many others
LITTOVIR

Pest
The Egyptian cotton leafworm (Spodoptera littoralis) and the Fall armyworm (Spodoptera frugiperda) are extremely polyphagous pests that attack more than 80 plant species of economic importance. The Egyptian cotton leafworm is widespread in Africa, Middle East and the countries of the Mediterranean basin. The Fall armyworm is widespread in South America and is spreading in North America and Africa.

While young larvae cause feeding damage to leaves, older caterpillars completely defoliate plants, bore into fruits, young stalks, bolls and buds. Due to its biology and the risk of developing resistance against chemical insecticides, the control of Spodoptera littoralis as well as Spodoptera frugiperda is challenging.

Product
Littovir is a highly selective larvicide against the Egyptian cotton leafworm and the Fall armyworm, offering residue-free and effective control, resulting in more flexibility when included in existing pest control and resistance management strategies.

PRODUCT-FACTS

Against
Egyptian cotton leafworm (Spodoptera littoralis) and Fall Armyworm (Spodoptera frugiperda)

Active ingredient
Spodoptera littoralis nucleopolyhedrovirus (SpliNPV)

Formulation type
Suspension concentrate

Concentration
5 × 10¹¹ NPV/liter

Standard dosage
200 ml per ha

Crops
Corn, strawberry, lettuce, tomato, sweet pepper, cotton, cabbage, potato, maize, melon, cocoa, rice, soybean, wheat and many others
**SPEXIT**

**Pest**
The beet armyworm (Spodoptera exigua) is one of the most destructive polyphagous pest species of world-wide economic importance. Beet armyworms occur in the warmer regions of Mediterranean countries, North America, Asia and Africa, and invade the cooler northern regions as temperatures permit.

Young beet armyworm larvae feed on the lower surface of leaves. Fully-grown larvae devour foliage completely, leaving only major veins.

**Product**
Spexit is suited for the efficient control of Spodoptera exigua larvae on various crops. The use of Spexit significantly reduces crop damage and pest population. Due to its high selectivity, Spexit is a valuable and efficient tool for integrated pest control programs using beneficial insects.

**PRODUCT-FACTS**

<table>
<thead>
<tr>
<th>Against</th>
<th>Beet armyworm (Spodoptera exigua)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active ingredient</strong></td>
<td>Spodoptera exigua nucleopolyhedrovirus (SeNPV)</td>
</tr>
<tr>
<td><strong>Formulation type</strong></td>
<td>Suspension concentrate</td>
</tr>
<tr>
<td><strong>Concentration</strong></td>
<td>$3.75 \times 10^{12}$ NPV/liter</td>
</tr>
<tr>
<td><strong>Standard dosage</strong></td>
<td>200 ml per ha</td>
</tr>
<tr>
<td><strong>Crops</strong></td>
<td>Sweet pepper, tomato, melon, strawberry, sugar-beet, cotton, cabbage, lettuce, sweet corn, onion and many others</td>
</tr>
</tbody>
</table>

**OMRI Listed**
For Organic Use
LOOPEX

Pest
The cabbage looper (*Trichoplusia ni*) is a highly migratory and destructive pest of various crops, especially in greenhouses in North America, but is also widely distributed in the tropics and subtropics. Cabbage loopers can severely defoliate plants. Early instar larvae feed on the lower surfaces of leaves, while larger caterpillars cause more conspicuous damage. Resistances to various insecticides have become a severe problem in cabbage looper control.

Product
Loopex offers highly efficient biological control of *Trichoplusia ni* larvae, prevents damage and controls *T. ni* populations. Loopex is a valuable tool that can be included in any pest control program, especially as an additional resistance management tool and for the control of insecticide resistant *T. ni* populations. Due to its high selectivity, Loopex is a safe option for cabbage looper control in production systems using beneficial insects.

**PRODUCT-FACTS**

**Against**
Cabbage looper (*Trichoplusia ni*)

**Active ingredient**
Autographa californica nucleopolyhedrovirus (AcMNPV)

**Formulation type**
Suspension concentrate

**Concentration**
$5 \times 10^{11}$ NPV/liter

**Standard dosage**
200 ml per ha

**Crops**
Typically on brassica crops e.g. cabbage, broccoli, collards, kale. Also present on: tomato, lettuce, pea, potato, etc.

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**SPEXIT**

Pest
The beet armyworm (*Spodoptera exigua*) is one of the most destructive polyphagous pest species of worldwide economic importance. Beet armyworms occur in the warmer regions of Mediterranean countries, North America, Asia and Africa, and invade the cooler northern regions as temperatures permit.

Young beet armyworm larvae feed on the lower surface of leaves. Fully-grown larvae devour foliage completely, leaving only major veins.

Product
Spexit is suited for the efficient control of *Spodoptera exigua* larvae on various crops. The use of Spexit significantly reduces crop damage and pest population. Due to its high selectivity, Spexit is a valuable and efficient tool for integrated pest control programs using beneficial insects.
TUTAVIR

Pest
The tomato leafminer (*Tuta absoluta*) is a key pest in tomato production with high levels of resistance against several classes of pesticides. Introduced to Spain in 2006, it is now a major issue for European and African tomato producers and is rapidly spreading towards the Middle and Far East. Larvae mine into the leaves and fruit where they feed and lead to severe damage.

Product
Tutavir contains a *Phthorimaea operculella* granulovirus for highly effective and selective control of the tomato leafminer. It is well suited for population and damage control. Due to its high specificity, Tutavir is the best candidate for integrated pest management programs, for example in greenhouses where beneficial insects are used. Furthermore, because of its unique mode of action, Tutavir is an important tool for resistance management in conventional and biological production systems.
Baculovirus products for forest pests

**Abietiv**
The balsam fir sawfly (*Neodiprion abietis*) is a native sawfly species that occurs throughout North America. Its larvae are a significant defoliating pest of balsam fir (*Abies balsamea*). *Neodiprion abietis* nucleopolyhedrovirus (NeabNPV) is a naturally occurring biocontrol agent for aerial application, isolated from sawfly populations in Newfoundland, Canada.

**PRODUCT-FACTS**

- **Against**
  - Balsam fir sawfly (*Neodiprion abietis*)

- **Active ingredient**
  - *Neodiprion abietis* nucleopolyhedrovirus (NeabNPV)

- **Application area**
  - Balsam fir (*Abies balsamea*)

**Lymantria dispar MNPV**
The gypsy moth (*Lymantria dispar*) is present in North America, Europe, North Africa and Asia. Its larvae feed on developing leaves of more than 300 tree species causing significant growth loss in forested ecosystems. *Lymantria dispar* MNPV (LdMNPV) is a baculovirus product for efficient control of the gypsy moth larvae. LdMNPV is the specific solution for interfering in a complex and diverse ecosystem.

**PRODUCT-FACTS**

- **Against**
  - Gypsy moth (*Lymantria dispar*)

- **Active ingredient**
  - *Lymantria dispar* multiple nucleopolyhedrovirus (LdMNPV)

- **Application area**
  - Mainly on deciduous hardwood trees (oak, maple, elm and many more)
BB-PROTEC

**Beauveria bassiana for control of agricultural insect and mite pests**

Bb-Protec contains the insect-pathogenic fungus Beauveria bassiana strain R444 which infects and controls whitefly, spider mite, and various other agricultural insect pests. Bb-Protec’s unique formulation prevents the fungal spores from drying out and enhances penetration and infection of the pest.

The active ingredient *Beauveria bassiana* R444, is a naturally-occurring, soil-borne insect-pathogenic fungus. *Beauveria* spores attach to and penetrate through the “skin” or cuticle of the insect. Once inside the insect, the fungus grows and multiplies. Death is caused by internal tissue destruction. In numerous greenhouse and field trials Bb-Protec proved to be highly effective against whitefly, spider mite, woolly whitefly, mealybug and other pests on a variety of crops.

**Advantages**
- Unique formulation
- Control of a broad spectrum of insect pests
- No residues and no withholding period after application
- Effective against all stages of the pest life cycle

**PRODUCT-FACTS**

**Against**
Various agricultural insect pests such as whitefly, spiter mite, woolly whitefly and mealybug

**Active ingredient**
*Beauveria bassiana* strain R444

**Formulation type**
Fine granular formulation

**Concentration**
≥ 2 × 10⁹ spores/g

**Standard dosage**
300–1000 g/ha as a full cover spray or drench into soil

**Crops**
Wide range of crops

**AMYPROTEC 42**

Protects your root system

AmyProtec 42 is a biological soil fungicide, containing spores of the naturally occurring soil bacteria *Bacillus amyloliquefaciens* FZB 42. In the root zone, the bacteria compete for space and nutrients with soil borne pathogens, such as Rhizoctonia and Erwinia and create a disease-inhibiting protective shield. AmyProtec 42 activates the plant’s natural defence mechanisms through induced systemic resistance. Enhanced root growth allows the plant to faster escape the susceptible state before plant emergence. This is an important mechanism to inhibit damping off and stem infections caused by soil borne pathogens.

AmyProtec 42’s unique mode of action helps the plant to build stronger and healthier roots and to improve its tolerance towards biotic (pathogens) and abiotic (water deficiency, salinity) stress.

**Key benefits**
- Pathogen displacement and induction of systemic resistance
- Active ingredient *Bacillus amyloliquefaciens* FZB42
- Formulation type Suspension concentrate
- Concentration > 2.5 × 10¹⁰ CFU/ml
- Standard dosage 0.5 – 2 l/ha depending on crop and application method
- Application methods Seed treatment, drenching, soil-spraying, injection into hydroponics, in combination with agrochemical, etc.

**OMRI Listed**
For Organic Use
## AMYPROTEC 42

**Protects your root system**
AmyProtec 42 is a biological soil fungicide, containing spores of the naturally occurring soil bacteria *Bacillus amyloliquefaciens* FZB42. In the root zone, the bacteria compete for space and nutrients with soil borne pathogens, such as Rhizoctonia and Erwinia and create a disease-inhibiting protective shield. AmyProtec 42 activates the plant’s natural defence mechanisms through induced systemic resistance. Enhanced root growth allows the plant to faster escape the susceptible state before plant emergence. This is an important mechanism to inhibit damping off and stem infections caused by soil borne pathogens.

AmyProtec 42’s unique mode of action helps the plant to build stronger and healthier roots and to improve its tolerance towards biotic (pathogens) and abiotic (water deficiency, salinity) stress.

**A perfect tool for integrated programs**
AmyProtec 42 can be mixed with almost all agrochemicals, using a wide range of application methods. Start treatments in early plant development and use AmyProtec 42 as an efficient part of integrated plant protection programs, as residue free resistance management tool and to reduce the use of conventional fungicides.

### PRODUCT-FACTS

<table>
<thead>
<tr>
<th>Key benefits</th>
<th>Pathogen displacement and induction of systemic resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient</td>
<td><em>Bacillus amyloliquefaciens</em> FZB42</td>
</tr>
<tr>
<td>Formulation type</td>
<td>Suspension concentrate</td>
</tr>
<tr>
<td>Concentration</td>
<td>( &gt; 2.5 \times 10^{10} \text{ CFU/ml} )</td>
</tr>
<tr>
<td>Standard dosage</td>
<td>0.5 – 2 l/ha depending on crop and application method</td>
</tr>
<tr>
<td>Application methods</td>
<td>Seed treatment, drenching, soil-spraying, injection into hydroponics, in combination with agrochemical, etc.</td>
</tr>
</tbody>
</table>

**Key benefits**
- Pathogen displacement and induction of systemic resistance
- Active ingredient: *Bacillus amyloliquefaciens* FZB42
- Formulation type: Suspension concentrate
- Concentration: \( > 2.5 \times 10^{10} \text{ CFU/ml} \)
- Standard dosage: 0.5 – 2 l/ha depending on crop and application method
- Application methods: Seed treatment, drenching, soil-spraying, injection into hydroponics, in combination with agrochemical, etc.
**T-77**

**T-77 for Botrytis control and plant wound protection**

T-77 contains the beneficial fungus *Trichoderma atroviride 77B*, a very effective aerial *Trichoderma* strain. The *Trichoderma* fungus colonizes any plant wound or senescing plant tissue, and prevents pathogens such as Botrytis and trunk diseases (e.g. *Eutypa lata*) from penetrating the plant. Thus, T-77 is effective against Botrytis on stems, leaves, flowers and fruits. In the same way, pruning wounds on grapevines and other fruit trees are protected against the entrance of pathogens. Grapevine trials have shown that the protecting fungus may still be present one year after application.

T-77 can either be applied as full cover spray or as a directed spray on pruned surfaces.

**Advantages**

- Prevents pathogen infection in senescing or damaged plant tissues
- Efficient Botrytis protection in greenhouses and open fields
- Fewer plant losses resulting from wood rot pathogens
- Vineyard’s productive life is extended as a result of disease prevention (e.g. *Eutypa lata*)

**PRODUCT-FACTS**

**Key benefits**

Colonizes damaged or senescing plant tissues and prevents pathogen infection, such as Botrytis spp., trunk diseases (e.g. *Eutypa lata*), *Monilinia* spp. etc.

**Active ingredient**

*Trichoderma atroviride 77B*

**Formulation types**

Wettable powder

**Concentration**

≥ 2 × 10⁹ spores/g

**Standard dosage**

250 – 500 g/ha

**Crops**

Grapes, tomato, onion, strawberry, nectarines, soybeans, etc.
RHIZOVITAL 42 / C5 / P45

The next generation plant inoculant
The product-line RhizoVital offers a range of biostimulating microbial inoculants, containing spores of the naturally occurring soil bacteria *Bacillus amyloliquefaciens* or *Bacillus atrophaeus*. The bacteria germinate in the soil and release enzymes which stimulate nutrient mobilization. RhizoVital supports the availability of plant nutrients which can lead to an increase in yield response. Tolerance towards stress caused by unfavorable climatic conditions and field management can be improved. Use RhizoVital as an integral part of a future oriented production strategy.

<table>
<thead>
<tr>
<th>RhizoVital 42</th>
<th>RhizoVital P45</th>
<th>RhizoVital C5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria species</td>
<td><em>Bacillus amyloliquefaciens</em></td>
<td><em>Bacillus atrophaeus</em></td>
</tr>
<tr>
<td>Strain</td>
<td>FZB42</td>
<td>FZB45</td>
</tr>
<tr>
<td>Key properties</td>
<td>Increased plant nutrient mobilization</td>
<td>Increased phytase-production favors P-mobilization</td>
</tr>
<tr>
<td>Temperature range for spore germination</td>
<td>12 – 45 °C</td>
<td>8 – 42 °C</td>
</tr>
<tr>
<td>Formulations</td>
<td>SC (liquid suspension concentrate) 2.5 × 10^9 cfu/ml</td>
<td>TB (talcum based dry powder) 1 × 10^9 cfu/g</td>
</tr>
<tr>
<td>Shelf-life</td>
<td>2 years, when stored &lt;25 °C, dry and protected from sunlight</td>
<td></td>
</tr>
<tr>
<td>Compatibility</td>
<td>Compatible with fungicides and other plant protection products</td>
<td></td>
</tr>
</tbody>
</table>

⚠️ All Bacillus strains are also available as raw material e.g for the formulation with fertilisers, seed coatings, etc.
T-GRO

For a larger, healthier and more effective root system

T-Gro contains spores of Trichoderma asperellum strain kd, a soil-borne strain selected through extensive research. Trichoderma spores germinate in the soil and colonize the root zone of the plant. T-Gro enhances plant growth and plant resistance to stress caused by sub-optimal conditions, such as waterlogging, drought or others. T-Gro supports the plant to develop a larger, healthier and more effective root system and can be applied to most crops.

Good results have been recorded on various crops, including potatoes, vegetables, nursery crops, pastures, fruit trees and turf. The method of application is flexible and depends on the crop type. T-Gro can be applied as a seed treatment, as an in-furrow spray or as a soil drench.

Advantages
• Increases plant growth and crop yield
• Improves the root system
• Improves germination and seedling development
• Versatile application methods
• Fully compatible with organic and residue free production
**T-GRO EASY-FLOW**

**Specific Trichoderma formulation for crops sown with mechanical planters**

T-Gro Easy Flow is a specially formulated *Trichoderma asperellum* product on a graphite and talc based carrier. It is the perfect seed flow lubricant to use with mechanical planters. The Trichoderma enhances and stimulates root growth, helping to buffer stress caused by extreme conditions such as waterlogging, drought or others. The formulation offers additional benefits to planting efficiency, such as a more even plant stand, no more skipped or doubled seeds, and more seeds planted per hectare.

The powder is sprinkled on top of the seed in the seed hopper and stirred into the top seed layers. As the tractor moves, the bouncing of the seed hopper ensures even distribution of the powder throughout the hopper. T-Gro Easy-Flow is the perfect Trichoderma seed treatment for broad acre crops like maize or wheat.

**Advantages**
- Specially designed to use with mechanical planters
- More even plant stand
- Excellent seed flow lubricant
- Increased plant growth and germination rate
- Improved root system

**PRODUCT-FACTS**

**Key benefits**
Growth stimulation, enhanced nutrient mobilization, and seed flow lubricant

**Active ingredient**
*Trichoderma asperellum* strain kd

**Formulation type**
Graphite and talc based dry powder formulation

**Concentration**
$\geq 2 \times 10^9$ spores/g

**Standard dosage**
1 – 40 g/kg seed (depending on seed size)

**Crops**
For crops sown with mechanical planters
RHIZOBIA for soybean and alfalfa

Effective Rhizobium inoculants for optimal nitrogen fixation in soya and alfalfa crops
Crop specific rhizobia strains guarantee a maximum level of N₂-fixation. Both products contain bacterial cells of specific nitrogen fixing rhizobium strains with high nodulation and fixation abilities. The unique granular formulation offers high concentration of bacterial cells within protective capsules giving the products natural sticking properties for seed treatments.

Advantages
- Easy to use and compatible with standard seed treatment equipment
- Increased yields and improved crop uniformity
- N-fertilizer application is not needed
- No additional stickers required
- High nodulation and N₂-fixation

Rhizobium and Trichoderma Twin Pack – Best results are obtained in combination with the T. asperellum product T-Gro (page 20): The rhizobium Twin Packs provide a unique combination of both microbial inoculants in one pack.

PRODUCT-FACTS

Key benefits
Nitrogen fixation through root nodulation

Active ingredient
For soybean: Bradyrhizobium japonicum WB74
For lucerne/alfalfa: Sinorhizobium meliloti RF14

Formulation type
Wet granular formulation

Standard dosage
50 g / 50 kg seeds

Crops
Soybean and lucerne/alfalfa
**DROSAL PRO**

Drosal Pro is a cup trap system for the monitoring or mass trapping of spotted-wing drosophila (*Drosophila suzukii*).

The cup traps can be filled with specific lures for *Drosophila suzukii*. The lures attract spotted-wing drosophila into the body of the trap, where they drown. The cup traps can be reused for several years. The Drosal Pro cup trap system is suited to be a component of a comprehensive control strategy in combination with other measures against spotted-wing drosophila.

**ADVANTAGES OF DROSAL PRO**

- Very easy set-up
- Reusable
- Can be filled with the preferred lure (i.e. DrosaLure)
- Shown to work in commercial operations
- No waiting periods, no residue problem

**DROSALURE**

DrosaLure is a highly attractive and stabilised attractant for spotted-wing drosophila. It is composed of cider vinegar, red wine, sugar and natural flavors and can be used with Drosal Pro or any other kind of liquid trap.

**ADVANTAGES OF DROSALURE**

- Specific attractant for *Drosophila suzukii*
- Natural ingredients
- Compatible with any kind of liquid trap
REBELL – Coloured sticky traps

Rebell amarillo  Yellow traps for reliable monitoring or mass trapping of fruit flies
Rebell bianco  Monitoring of sawflies and for the control of raspberry beetles
Rebell blu  Monitoring of thrips
Rebell giallo  Monitoring of white flies, leafminers, sciarid flies, etc.
Rebell orange  Monitoring of carrot flies
Rebell rosso  Monitoring or mass trapping of shothole borers in orchards and vineyards
Glurex forte  Biodegradable solvent for the cleaning of Rebell traps
Tangle-Trap glue  Insect glue for the reuse of Rebell traps

ADVANTAGES OF REBELL TRAPS

✔ Specific, cadmium-free colours ensure high reliability and low by-catches
✔ Integrated UV-filter assuring long-lasting colour fastness
✔ Strong polypropylene protects the traps from deformation
✔ Very strong glue performs even under severe weather conditions
✔ Possible to clean and re-use

APHINITY EAB

Combination of a pheromone, a host leaf volatile, together with a green sticky trap for monitoring and early detection of Emerald Ash Borer (Agrilus planipennis).
PHERONORM

Andermatt Biocontrol offers a large range of lures for monitoring of economically important pest species:

<table>
<thead>
<tr>
<th>Species</th>
<th>Pest Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrolepiopsis assectella</td>
<td>Leek moth</td>
</tr>
<tr>
<td>Adoxophyes orana</td>
<td>Summer fruit tortrix</td>
</tr>
<tr>
<td>Agrotis ipsilon</td>
<td>Black cutworm</td>
</tr>
<tr>
<td>Agrotis segetum</td>
<td>Turnip moth</td>
</tr>
<tr>
<td>Anarsia lineatella</td>
<td>Peach tree borer</td>
</tr>
<tr>
<td>Autographa gamma</td>
<td>Sylver-Y moth</td>
</tr>
<tr>
<td>Bactrocera oleae</td>
<td>Olive fly</td>
</tr>
<tr>
<td>Byturus tamentosus</td>
<td>Raspberry beetle</td>
</tr>
<tr>
<td>Cameraria ohridella</td>
<td>Chestnut leafminer</td>
</tr>
<tr>
<td>Ceratitis capitata</td>
<td>Medflies</td>
</tr>
<tr>
<td>Contarinia nasturtii</td>
<td>Swede midge</td>
</tr>
<tr>
<td>Cossus cossus</td>
<td>European goat moth</td>
</tr>
<tr>
<td>Cydia nigricana</td>
<td>Pea moth</td>
</tr>
<tr>
<td>Cydia pomonella</td>
<td>Codling moth</td>
</tr>
<tr>
<td>Cydia splendana</td>
<td>Chestnut tortrix</td>
</tr>
<tr>
<td>Dasineura gledichiae</td>
<td>Honey locust pod gall midge</td>
</tr>
<tr>
<td>Diabrotica virgifera</td>
<td>Western corn rootworm</td>
</tr>
<tr>
<td>Diaphania perspectalis</td>
<td>Box tree moth</td>
</tr>
<tr>
<td>Eutorhyncis formosana</td>
<td>Cherry bark tortrix</td>
</tr>
<tr>
<td>Eupoecilia ambiguella</td>
<td>European grape berry moth</td>
</tr>
<tr>
<td>Grapholita funebrana</td>
<td>Plum fruit moth</td>
</tr>
<tr>
<td>Grapholita lobarzewskii</td>
<td>Small-fruittortrix</td>
</tr>
<tr>
<td>Grapholita molesta</td>
<td>Oriental fruit moth</td>
</tr>
<tr>
<td>Hedya nubiferana</td>
<td>Green budworm moth</td>
</tr>
<tr>
<td>Helicoverpa armigera</td>
<td>Cotton bollworm</td>
</tr>
<tr>
<td>Helicoverpa virescens</td>
<td>Tobacco budworm</td>
</tr>
<tr>
<td>Leucophaea scitella</td>
<td>Pear leaf blister moth</td>
</tr>
<tr>
<td>Lobesia botrana</td>
<td>Grapevine moth</td>
</tr>
<tr>
<td>Lymantria dispar</td>
<td>Gypsy moth</td>
</tr>
<tr>
<td>Mamestra brassicae</td>
<td>Cabbage moth</td>
</tr>
</tbody>
</table>

✔ Continuous, reliable quality for successful monitoring
✔ Available as single lures or as trap sets
✔ Standard monitoring system used by research institutes and advisory services all over the world

Lures for other pest species available on demand

Ostrinia nubilalis (Z) | European corn borer
Pammene rhediella | Fruitlet mining tortrix
Pandemis heparana | Apple brown tortrix
Phthorimaea operculella | Potato tuber moth
Plutella xylostella | Diamond back moth
Quadraspidiotus perniciosus | San Jose scale
Rheselölla theobaldi | Raspberry cane midge
Rhagoletis cerasi | Cherry maggot
Rhynchophorus ferrugineus | Red palm weevil
Sparganothis pilgeriana | Grape leaf roller
Spilonota ocellana | Eye-spotted bud moth
Spodoptera exigua | Beet armyworm
Spodoptera littoralis | Egyptian cotton leafworm
Synanthedon myopaeformis | Apple clearwing moth
Synanthedon tipuliformis | Currant clearwing moth
Tuta absoluta | Tomato leafminer
Zeuzera pyrina | Leopard moth

[Image of a trap with a lure on it]
Smart solutions for efficient rodent control

topcat – The vole trap.
The internationally patented topcat-trap is a very efficient, high-quality trap for catching voles from both tunnel directions. topcat is characterized by its sensitive release mechanism and its ability for above ground control of capture. topcat allows for quick and easy handling in a comfortable and hygienic operating position.

topsnap – The clever mousetrap.
topsnap is exceptionally effective: its tunnel-like body awakens the natural curiosity of mice and guarantees in combination with the highly sensitive, two-sided trapping mechanisms, excellent results. topsnap is the environmental- and user-friendly alternative to toxic bait, for long-term use in indoor- and outdoor-areas.

standby – The vole fence.
The internationally patented standby system is an easy and effective tool to prevent (re-)immigration of voles into a valuable area. Once installed, the reliable and proven system is self-governed. Natural predators (foxes, cats and others) empty the live-catch traps along the fence by lifting the flip-top of the traps.

ADVANTAGES OF THE TOPCAT-TRAP

✔ High quality product made of stainless steel (rust-free)
✔ Quick and easy handling
✔ Catches from both tunnel directions
✔ Very sensitive release mechanism
✔ Can be used against voles, field mice, etc.

ADVANTAGES OF THE TOPSNAP-TRAP

✔ Innovative two-sided trapping system against small mice moving above ground
✔ High quality product made of stainless steel and solid plastic
✔ Easy, fast and secure activation of the trap from the outside
✔ Contact-free release of catch
✔ Safe for users, infants and domestic animals
Beneficial insects and insect feed

**Adalia bipunctata**
Against aphids

**Anisopteromalus calandrae**
Against larvae of snout beetles, lesser grain borers, drugstore beetles, tobacco beetles

**Habrobracon hebetor**
Against larvae of Indian meal moths, flour moths, tobacco moths, tropical warehouse moths, grain moths

**Trichogramma evanescens**
Against eggs of Indian meal moths, flour moths, tobacco moths, tropical warehouse moths, grain moths, cloth moths

**Ephestia kuehniella**
Frozen eggs of *Ephestia kuehniella* serve as a main food source in the production of many different beneficial insects
Entomopathogenic nematodes

Entomopathogenic nematodes occur naturally in the environment as parasites of many insect larvae. The mass release of these nematodes provides an efficient and curative control of key insect pests in a wide range of crops. Once released, nematodes actively seek out their hosts and penetrate into the insect releasing symbiotic bacteria that multiply and rapidly kill the insect.

**Heterorhabditis bacteriophora**
Black vine weevil (*Otiorrhynchus sulcatus*), Garden chafer (*Phyllopertha horticola*), Hazelnut borer (*Balaninus nucum*), Welsh chafer (*Hoplia spp.*), Dung beetle (*Aphodius spp.*) and many others

**Steinernema feltiae**
Fungus gnat (*Sciaridae*), Overwintering codling moth (*Cydia pomonella*), Western flower thrips (*Frankliniella occidentalis*), Leafminers

**Steinernema carpocapsae**
Mole cricket (*Gryllothalpa gryllothalpa*), Overwintering codling moth (*Cydia pomonella*), Crane flies (*Tipula spp.*), Cutworms (*Agrotis spp.*), Red palm weevil (*Rhynchophorus ferrugineus*), Palm borer (*Paysandisia archon*), Duponchelia fovealis, Sycamore lace bug (*Corythucha ciliata*) and many others

**ADVANTAGES**

Entomopathogenic nematodes are a natural product and safe for users, consumers and the environment.

Andermatt Biocontrol has more than 20 years of experience related to the production of entomopathogenic nematodes.

Easy application with AquaNemix 2%.
Entomopathogenic nematodes occur naturally in the environment as parasites of many insect larvae. The mass release of these nematodes provides an efficient and curative control of key insect pests in a wide range of crops. Once released, nematodes actively seek out their hosts and penetrate into the insect releasing symbiotic bacteria that multiply and rapidly kill the insect. Entomopathogenic nematodes are a natural product and safe for users, consumers and the environment. Andermatt Biocontrol has more than 20 years of experience related to the production of entomopathogenic nematodes.

Fenicur, Pyrethrum FS and Quassan are manufactured in Switzerland. Each of these products are registered as plant protection product in Switzerland and listed by the Swiss Research Institute of Organic Agriculture (FiBL) for the use in organic farming.

**Fenicur**
A fennel oil based fungicide that is used against powdery mildew and rust.

**Pyrethrum FS**
A biopesticide based on Pyrethrin (without Piperonyl butoxide) that is used against aphids, spider mites, whiteflies, thrips etc.

**Quassan**
A biopesticide based on Quassia amara, that is used against apple sawflies, aphids, etc.

PRODUCT-FACTS
Fenicur, Pyrethrum FS and Quassan are manufactured in Switzerland. Each of these products are registered as plant protection product in Switzerland and listed by the Swiss Research Institute of Organic Agriculture (FiBL) for the use in organic farming.
Andermatt Biocontrol is certified according to ISO 9001:2008.
Andermatt Biocontrol is embedded in the family- and employee-owned Andermatt Holding, which has more than 200 highly motivated employees. The company owns shares of several other companies listed below:

Structure of the Andermatt Holding

Andermatt Biocontrol is certified according to ISO 9001:2008.
Subsidiaries of Andermatt Biocontrol in the spotlight

**Sylvar**

As a leader in environmentally safe and efficacious products for integrated pest management programs in Canada and forestry in the USA, Sylvar Technologies Inc.’s focus is to put products at the disposal of the end-user facilitating healthy crops, healthy forests and a healthy environment. Sylvar offers several bio-rational product lines including: aPhinity®: Sylvar’s pheromone-based technology-monitoring products; a suite of baculovirus based bio-insecticides; and bio-stimulants.

**Andermatt do Brasil**

Andermatt do Brasil, established in 2015, is advancing in the development of a solid portfolio of biorational products for organic farming and for integrated pest management with attention to the large row crops. The Helicoverpa armigera baculovirus product Verpavex® was launched at the beginning of 2017 and is gradually gaining market acceptance. Andermatt also introduced Dynbac®, a natural plant activator, and the biofertilizer line will be complemented with PhosBac®. Introductions of further baculovirus-based insecticides are expected for 2018.

**Andermatt USA**

Andermatt USA Corp has been established in January 2017 to increase the market presence and the proximity to our customers in the US market. Andermatt USA has successfully launched its registered products Helicovex and Spexit. In the coming seasons, an interesting range of biopesticides, biostimulants, bioinoculants and other products will expand the company’s product portfolio. Andermatt USA will focus its market efforts on organic and IPM farming. A high-level technical support and cooperation with key stakeholders will provide US producers with valuable tools for effective crop protection.
Established in July 2017, the United Kingdom is the latest country to have a subsidiary of Andermatt Biocontrol. Andermatt UK will be a leader in biological technologies, with a portfolio of fungicides, insecticides and fertilizers suitable for both organic and integrated growing systems. These products will be from both the Andermatt group development pipeline as well as third parties. The market leading products will be accompanied by multi-platform user support to achieve the best product performance.

Madumbi Sustainable Agriculture is a sales and marketing company specializing in the distribution of sustainable solutions in Africa. Our vision is to drive sustainable agriculture for future generations by assisting farmers to care for the vitality of their crops and livestock and avoid drastic control measures. Our broad product range includes BioNoculant’s, BioStimulant’s and BioManagement products with a wide range of bio-rational actives including fungi, bacteria, baculoviruses and plant extracts.

Andermatt France enjoys solid growth of its activities, proposing a flow of innovative solutions dedicated to organic or IPM producers. Thanks to their performance, Madex Pro and Madex Twin have been gaining major market shares. While the fungicide Curatio and NeemAzal-T/S insecticide only benefit emergency registration status, they have been successfully trialed as alternative to conventional pesticides. Registration decisions are expected short term that will trigger introduction of novel products or uses, such as the fungicide Vitisan.

Plant Health Products (Pty) Ltd has specialized in the development and production of fungal and bacterial biocontrol products and plant growth enhancers over the last 19 years, with six products in the market. The company places a significant emphasis on its research and development component and has developed effective formulations and production processes and has several new products under development. The PHP product range of T-Gro, T-Gro Easy Flow, T-77, Bb Protec, have been successfully introduced to several countries.
Your technical support

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Andermatt Biocontrol has been dedicated to innovative biocontrol solutions for 30 years. Since 1988, we provide alternatives for growers to replace chemical pesticides with high quality biological solutions for a sustainable agriculture. Nature will continue to lead our future innovations and our passion further drives us for healthy food and a healthy environment. In 2018 we will celebrate our 30th anniversary with various activities over the year.