

**HECHENBICHLER**

A BOOST FOR SOIL, PLANTS AND ANIMALS



# Your Partner for Sustainable Agriculture



**BIOSTIMULANTS**



**FERTILIZER**



**SLURRY TREATMENT,  
STABLE HYGIENE**



**ANIMAL CARE, FEED**



# Well rooted in Austria, we supply the whole world

## From Tyrol to over 30 countries

We supply **innovative and highly effective** products in the areas of soil improvement and plant strengthening for sustainable agriculture. We help in the conscious use of valuable on-farm raw materials and support animal health.

We offer **many years** of experience from over 30 countries worldwide and a wide range of **practical experience** in the areas of plant strengthening, fertilizers and animal welfare.

We manufacture our products in the EU in strict compliance with **European quality and environmental standards**. Our customers appreciate the high efficiency of our products, our technical support and our **exceptional customer service**.

## Contact



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### Hechenbichler GmbH Company Facts

- ▶ Partners in 30 countries
- ▶ 75 Years of experience
- ▶ 25 Employees

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HEADQUARTERS  
Innsbruck, Austria





Dear Farmers, Business Partners and Valued Customers,



We at Hechenbichler and I personally hope that you have had as good a year as possible, with many successes, progress and a little bit of luck. This is important, because agriculture faces a wealth of challenges that need to be overcome. One of the biggest of these is undoubtedly climate change. Extreme weather conditions, unpredictable natural disasters and increasing droughts pose a serious risk to crop yields and livelihoods in agriculture. Adaptation and sustainability strategies are essential to meet this challenge.

Agriculture is also faced with the task of making its production methods and systems more sustainable. The excessive use of pesticides and fertilizers has caused ecological problems and impaired soil fertility. Now more than ever, sustainable agriculture that conserves resources and protects the environment is crucial for the farmer, for our children and for the planet. In addition, farmers are struggling with economic challenges such as fluctuating market prices, rising production costs and the pressure to remain competitive in global supply chains. Nevertheless, we move forward with confidence. Historically, agriculture has always adapted to changing conditions and is one of the most important pillars of our society. With the right attitude, the necessary support, research and innovation, agriculture

will continue to be fit for the future. With our products and solutions, we take responsibility for the future and look forward to a successful collaboration.

With best regards,  
Hanspeter Hueter  
Managing Director

**Slurry Treatment & Stable Hygiene**

- GÜLLEMAX STALLMAX (6-13)
- GÜLLEMAX N-FIX (14)
- POWER-N (15)

**Biostimulants & Fertilizers**

- FEINSTREU (16)
- AMALGEROL STARTER (22)
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**Animal Care & Feed**

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- ▶ Improves stable hygiene
- ▶ Promotes decomposition
- ▶ Increases the basic forage quality



**A healthy environment for animals and humans**

Mucolytic, essential oils dissolve faecal residues from walls, stables and milking installations. As a result, stable flies lose their breeding ground and germ sources are eliminated.

**GÜLLEMAX** binds toxic, foul-smelling gases such as ammonia and hydrogen sulphide and creates a healthy environment for animals and humans.

**Improves stable climate - Perfect stable hygiene**

- ▶ **Dissolves persistent faeces crusts** **GÜLLEMAX stops putrefaction** and stimulates the **natural conversion of the manure.**
- ▶ **Works naturally**, without chemicals
- ▶ Improves stable hygiene

**Promotes decomposition - Highly efficient manure treatment**

- ▶ **Dissolves sewer blockages and surface crusts** **▶ Makes liquid manure homogeneous** and fluid
- ▶ **Reduces odour** and nutrient outgassing **The naturally converted manure does not stink, does not stick, slimes less and flows better.**

**Increases the basic forage quality - More milk from forage**

- ▶ Maximizes the **nitrogen and sulphur fertilization effect** of the liquid manure **GÜLLEMAX binds valuable nutrients, suppress weeds and promotes clover and tasty under grass.**
- ▶ **Improves plant compatibility**
- ▶ **Prevents burning** or staining of the grass

**GÜLLEMAX**  
**Composition**  
 Essential oils, plant oils and extracts, mineral oil distillates

**STALLMAX**  
**Composition**  
 Essential oils, plant oils and extracts, shale oil  
**STALLMAX** meets the requirements of regulation (EU) 2018/848 idgF in the current version and is **allowed for organic farming.**

pH value: 8 - 9

**The correct, economical dosage**  
**0,1 l GÜLLEMAX/STALLMAX per livestock unit (LSU) and week** is the recommended and maximum application rate required for regular long-term use.

**Pack sizes**  
 Canister 10 l; 84 x 10 l / pallet  
 Canister 25 l; 36 x 25 l / pallet  
 Drum 200 l; 2 x 200 l / pallet



**Wash Barn and Milking Parlour**



Crusts soaked in **GÜLLEMAX** can be easily washed off with a high pressure cleaner after a short reaction time .

**Nothing but manure crusts everywhere**

Walls and floors are totally covered with encrusted faeces. The sticky, dried encrustations are difficult to remove. You stand for hours struggling with the high pressure cleaner.

**GÜLLEMAX - Washing barn and milking parlour made easy**

**With GÜLLEMAX you can do it in half the time.** The special composition of mucolytic and essential oils quickly breaks down the crusts. After a short reaction time, the soiling can be removed effortlessly with a high pressure cleaner.

**GÜLLEMAX helps you save money!**

Less cleaning agent is necessary, additionally shorter washing times cut your water consumption.

**Blockages and Surface Scum Dissolved**



**GÜLLEMAX** homogenises the manure, so that surface crusts and blocked drains clear within 30 days.

**Sticky manure blocks drains and floats on the surface**

**Untreated slurry putrefies instead of decomposing**, turning into a sticky, thick mixture. This results in blockages in the drainage system and thick floating layers of scum.

**GÜLLEMAX lets manure flow**

**GÜLLEMAX** accelerates manure decomposition. Blocked drains clear and surface crusts dissipate. The manure is able to flow again, avoiding unnecessary work.

**The effort of drain rinsing is minimised.** The manure is far more homogeneous, reduces mixing time and costs.

In most cases, no additional water is needed, which in turn **saves time and transport costs.**



## Reducing Barn Cleaning Time



Manure disperses extremely well on areas treated with GÜLLEMAX, saving both time and water.

## Revitalised Grassland, Gain Nutrients



Manure refined with GÜLLEMAX ensures healthy, nutrient-rich basic forage.

## Healthy Air



GÜLLEMAX reduces the pollution by toxic, foul-smelling gases. Animals and humans breathe healthy, clear air.

## Fewer Barn Flies



Flies seek putrescence, annoy animals and people, and compromise barn hygiene.

### Trouble with sticky manure

#### Does mucking out rob you of valuable time?

Moist and sticky manure makes mucking out cubicles and pedal manure stables a tough job.

### GÜLLEMAX – effortlessly mucking out

Slurry manure maintained with GÜLLEMAX is less sticky and has significantly less volume.

This makes mucking out easy. The **manure decomposes faster and fertilises better.**

### Stinking manure means lost nutrients

**Ammonia, methane and hydrogen sulfide** are important nutrients and volatilize rapidly in untreated manure. They pollute the air and the fertilizing effect of the manure decreases.

### GÜLLEMAX binds valuable nutrients in the liquid manure

Make sure that the **valuable nutrients** contained in the liquid manure **are preserved.** This allows you to **maximize the fertilizing effect** of your farmyard manure and **reduce the amount of purchased concentrated feed.**

### Bad air in the barn?

**Ammonia, methane and hydrogen sulphide are irritant gases,** causing harmful air in the barn and compromising animal and human health.

For example, a cow breathes 60 m<sup>3</sup> and a pig 15 m<sup>3</sup> of barn air through their lungs daily, while a human breathes 1 m<sup>3</sup> per hour spent in the barn. This results in flu-like infections and coughs.

**Stinky air contaminated with bacteria reduces daily weight gain in animals.** A study by the Austrian Federal Institute Gumpenstein showed that poor barn air reduces feed conversion by up to 8%.

### GÜLLEMAX ensures healthy air

**GÜLLEMAX binds harmful gases** and thus noticeably **improves the stable air!** Healthy air is essential for a clear respiratory tract, **healthy animals** and **better daily weight gains.** Your holiday guests and neighbours will also smell the significant improvement.

### Thousands of annoying flies?

Residual manure on the barn walls and putrid slurry attract flies. Surface scum on the slurry channels are ideal breeding grounds for fly larvae. Especially during warm weather, the fly population often explodes.

### GÜLLEMAX makes life hard for flies

Regular use of GÜLLEMAX ensures a clean and pleasant smell in the barn. Barn hygiene is improved.

- ▶ Useful bacteria decompose the slurry and deprive fly maggots of their basic food resource.
- ▶ Healthy, clear air is unattractive to flies.
- ▶ Dissolving surface scum means fewer surfaces for depositing fly eggs

Swarms of flies are a thing of the past. The farm animals are quieter in the barn and have a noticeably improved quality of life.





## Application in Barns

### 0.1 l GÜLLEMAX per LSU and week

We recommend 0.1 l GÜLLEMAX for each livestock unit (LSU) and week for ongoing application in the barn.

Subject to your specific operating schedule, the GÜLLEMAX dosage can be spread across several applications per week.

Mix GÜLLEMAX with water at a ratio of at least 1:20 (5% GÜLLEMAX solution) and ensure an even distribution.

#### Application in cattle barn and for other ruminants

**Slatted floors:** Pour into the channels through the gaps.

**Scraper manure removal system:** Pour on at the starting point and allow the scraper to distribute it across the whole area.

**Stanchion barn:** Pour over the manure channel before mucking out.

#### Application in pig barn

**Piglets and breeding sows:** Pour over the gaps between the slats or litter.

**Fattening pigs:** We recommend using 0.25 l GÜLLEMAX per pig and fattening period. Put 50% into the empty channels at the start of the period and 50% in the middle of the fattening period.

## Slurry Treatment

### 0.2 l GÜLLEMAX per m<sup>3</sup> slurry

We recommend 0.2 l GÜLLEMAX per cubic meter of slurry for the dissolution of drain obstructions and surface scum as well as for the treatment of manure pits.

Mix GÜLLEMAX with water at a ratio of at least 1:20 (5% GÜLLEMAX solution) and ensure an even distribution.

#### Clear channel blockages

In order to dissolve drain obstructions more quickly, punch a hole through the surface scum with the lance of the high pressure cleaner, allowing the GÜLLEMAX solution to be injected directly.

#### Break up and dissolve surface scum

Apply the 5% GÜLLEMAX solution directly into the manure pit to dissolve surface scum in slurry vessels. If possible, make holes in the surface scum at several points to allow the GÜLLEMAX solution to develop its full effect. Add the GÜLLEMAX solution and mix it into the contents of the manure pit if possible. This helps to distribute the GÜLLEMAX solution and accelerate its impact. The surface scum will have dissolved after approximately 30 days.

#### Managing manure pits

### 0.2 l GÜLLEMAX / m<sup>3</sup> slurry.

Dilute with water at a minimum ratio of 1:20 (makes a 5% GÜLLEMAX solution).

#### APPLICATION TIP

Using GÜLLEMAX in barns on an ongoing basis prevents channel blockages and the creation of surface scum.



## Conditioning Solid Manure

### 0.1 l GÜLLEMAX per LSU and week

Manure conditioned with GÜLLEMAX is not as sticky and is less voluminous.

We recommend 0.1 l GÜLLEMAX for each livestock unit (LSU) and week to facilitate mucking out and to accelerate manure decomposition.

#### Treating calf pens and sloped floor barns

1. Muck out
2. Clean barn with 5% GÜLLEMAX solution
3. Spread / distribute fresh straw or litter
4. Distribute 0.1 l GÜLLEMAX evenly per LSU and week. We recommend to spread this dosage over several applications each week.

#### Save time mucking out poultry barns

To improve barn hygiene not only for broilers and turkeys, but also for rearing pullets and holding laying hens, we recommend treating the barns with a 5% GÜLLEMAX solution.

For turkeys and fattened chickens we recommend 1.5 l GÜLLEMAX per 100 m<sup>2</sup> barn floor area, for pullets and laying hens a slightly increased dose of 2 l GÜLLEMAX per 100 m<sup>2</sup> barn area (including stalls).

#### Recommended steps for application:

1. Muck out
2. Spray dry floors, walls, ceiling and stall partitions with GÜLLEMAX solution and leave for 30 minutes to soak in
3. Wash and disinfect, allow to dry thoroughly each time
4. Spray dry floors, walls, ceiling and stables with GÜLLEMAX solution again and leave to dry
5. Spread litter and put the chicks or hens in the barn

#### Composting solid manure

### 0.3 l GÜLLEMAX / m<sup>3</sup> solid manure.

Also dilute with water at ratio of 1:20 (makes a 5% GÜLLEMAX solution) and pour over solid manure in layers.

## Cleaning Barns

### 5% GÜLLEMAX solutions

We recommend a 5% Güllemax solution for washing barns and milking parlours.

Mix GÜLLEMAX with water at a ratio of at least 1:20 (5% GÜLLEMAX solution) and ensure an even distribution. 1 litre of GÜLLEMAX to 20 litres of water is sufficient for approximately 100m<sup>2</sup> barn area.

#### Wash barn and milking parlour

1. Spray encrusted dung and dry soiled surfaces with the 5% GÜLLEMAX solution until it is dripping wet
2. Leave for 20 - 30 minutes to soak in so that GÜLLEMAX can soften the soiled and encrusted areas
3. Spray the dirt off from a short distance (10 - 30 cm) with fresh water using a high pressure washer
4. Spray the cleaned surfaces again with the 5% GÜLLEMAX solution to prevent new dirt sticking so firmly

#### APPLICATION TIP

It is easiest to deliver the GÜLLEMAX solution with a high pressure cleaner or a foam gun.





## Barn Cleaning and Preventive Manure Care "in a Fraction of the Time"



"Since we have the freestall barn, **GÜLLEMAX** is our first choice for cleaning our barns."

### The Result

"The cleaning of the barn with **GÜLLEMAX** is much easier, faster and more economical than before." Josef Misslinger summarizes.

"Also the smell in the barn has improved significantly and we have fewer flies."

Once the barn is clean, it is important to apply another layer of **GÜLLEMAX** onto all the clean surfaces. This film protects the surfaces and prevents the binding of dung, which makes the next cleaning faster and easier.



### Josef Misslinger

Wiflberghof, Hopfgarten

Brixental/Tyrol

Dairy farm with breeding and traditional cheese dairy; Freestall barn with 130 LSU Simmental cattle

**"Recently a visitor told us: Your manure doesn't stink - it smells."**

Josef Misslinger

### The Task

Josef Misslinger and his family run a dairy farm with 130 LSU Simmental cattle.

The average milk production of the farm is around 9 000 kg of milk per cow and year.

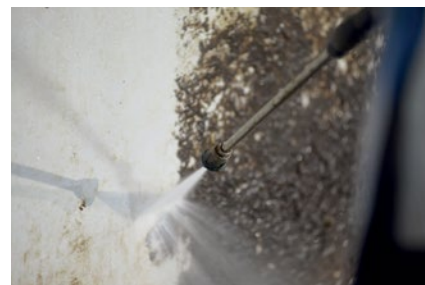
In summer, when the cows are on the mountain pasture, Josef Misslinger cleans the barn.

### The Procedure

- Spray encrusted dung on the walls and floors with **GÜLLEMAX** 5% solution until the dung is soaked and the walls are dripping wet.
- Leave for 30 minutes
- Spray dirt off with cold water using a pressure cleaner
- Apply **GÜLLEMAX** 5% solution as a protective film on the floors and walls



"With the dosing device we apply **GÜLLEMAX** as a 5% solution on walls and floors."



"The soaked feces crusts come off easily when cleaned with a high-pressure cleaner."

## Significantly Better Barn Environment



The University of Veterinary Medicine in Vienna uses **GÜLLEMAX** to treat slurry.

### Liquid manure treatment - a necessity in modern agriculture

„We noticed that the smell was getting worse and that there was an excessive number of flies in the barn. I researched the problem on the Internet and came across the company Hechenbichler in Innsbruck, who produce and distribute the product **GÜLLEMAX** in Austria. A Hechenbichler consultant showed us the product and recommended a trial application.

The results were impressive and since then we have been using **GÜLLEMAX** routinely on our farm. The bad smell has largely disappeared and the environment in the barn has improved significantly. We haven't seen any problems with surface scum or blockages when spreading the manure. The consistency of the manure is much better (more fluid) and we haven't noticed any grassland scorching as is common with thick or caustic manure.“

## Homogenous, More Fluid Slurry



In the farrowing crate treated with **GÜLLEMAX**, the manure was homogenous and could flow off evenly and easily.

### **GÜLLEMAX** enhances slurry

**A slurry treatment trial was conducted at a pig production business in Burgenland, Austria.**

„It was easy to pick the farrowing room where **GÜLLEMAX** had been used due to the better air quality. The liquid manure in the slurry channels had a more homogenous surface. When draining the slurry it was obvious that the slurry from the trial section was more homogenous in terms of colour and consistency from beginning to end. Overall, the slurry from the trial section drained more quickly.

**Manager's conclusion:** In light of its simple application in the farrowing barn and the clearly discernible improvement to the air in the barn, its use was extended to both farrowing sections. In terms of washing, the sections were pretreated with **GÜLLEMAX**, thus shortening the cleaning time and „priming“ the slurry channel with **GÜLLEMAX** at the same time.“



- ▶ Stabilize ammonium nitrogen
- ▶ Optimize plant availability
- ▶ Protect environment

- ▶ Optimal nitrogen-sulphur ratio
- ▶ 3 types of nitrogen
- ▶ Long-lasting effect

### Stabilize nitrogen - maximize fertilizer effect

With our **DMPP-based nitrification inhibitor**, you can effectively stabilize the nitrogen from your liquid manure. GÜLLEMAX N-FIX **slows down the activity of soil bacteria (Nitrosomonas bacteria)** and thus delays the conversion of ammonium into nitrite.

The **ammonium nitrogen applied remains stable and available to plants for up to 14 weeks**, depending on the soil temperature and soil type, resulting in consistently vigorous plant growth and improved crop quality.

### Simple and time-saving, top combination

GÜLLEMAX N-FIX is **easy to use** and can be added directly to the slurry tank **using a bypass**.

To further increase the fertilizing effect of your farm manure and ensure the availability of nitrogen for your crops over a longer period of time, we recommend **combining GÜLLEMAX N-FIX with our high-performance liquid**

**nitrogen fertilizer POWER-N.** POWER-N (27% nitrogen, 3% sulphur) provides an optimum boost, especially if your liquid manure has a low nitrogen content. This combination not only improves the nutrient supply, but also reduces the need for additional fertilizer applications.

### Protects the environment & increases the efficiency of nitrogen use

The use of the nitrification inhibitor GÜLLEMAX N-FIX makes a significant contribution to environmental protection. By effectively slowing down the conversion of ammonium into nitrite, you **reduce nitrate leaching** into the groundwater **and the emission of nitrous oxide** into the air.

Another important aspect is the improvement of nitrogen use efficiency (NUE). This means that a greater proportion of the nitrogen applied is absorbed and used by the plants, which is reflected in their healthy and vigorous growth.

### Composition

5 % 3,4-dimethyl pyrazole phosphate

pH value: 5

Specific weight: 1,1 kg/l

### Recommended application rates

**Grassland:** 4-5 l/ha for the first and optionally for the second fertilization.

**Field crops (cereals, maize, rape, sugar beet, potatoes):** 5-6 l/ha

### Application

GÜLLEMAX N-FIX can be mixed in undiluted during slurry tanker loading by means of a bypass or suction nozzle.

### Packaging units

Canister 20 l; 24 x 20 l / Pal.



Spreading with the drag hose

### This gives cattle slurry more fertilizer power

**Cattle slurry often does not contain enough nutrients.** Nitrogen only occurs in organic form and as ammonium. Especially in spring, when the soil temperatures are low, very little or no nitrogen at all is available

for the plants.

The **growth in grasslands** is therefore **delayed** and the **feed value is reduced**. Corn growth stagnates and it remains in early development.

### Enhance your cattle slurry

**Supplementing your cattle slurry** with the liquid fertilizer POWER-N significantly improves the value of the liquid manure. Just **1 l POWER-N** per m<sup>3</sup> liquid manure adds **+10 % nitrogen** and **+10 % sulphur to the liquid manure**.

The nitrogen is contained in the form of **ammonium, urea** and **quickly**

**available nitrate**. This ensures nitrogen and sulphur are **available** to the plants evenly **throughout the entire growth cycle**. Depending on the intensity of the agriculture, the application rate and the degree of dilution of the liquid manure, 1 - 2 l POWER-N per m<sup>3</sup> of liquid manure are recommended.

### Advantages

- ▶ Significantly **more nitrogen and sulphur in the liquid manure**
- ▶ The nutrients are **consistently available** over the entire growth cycle

- ▶ Improved protein content and energy density of the feed, **higher milk yield**
- ▶ **Strong early development** of corn plants

### Composition

27 % Nitrogen (N) 351 g/l  
3 % Sulphur (S) 39 g/l

pH value: 7

Specific weight: 1,3 kg/l

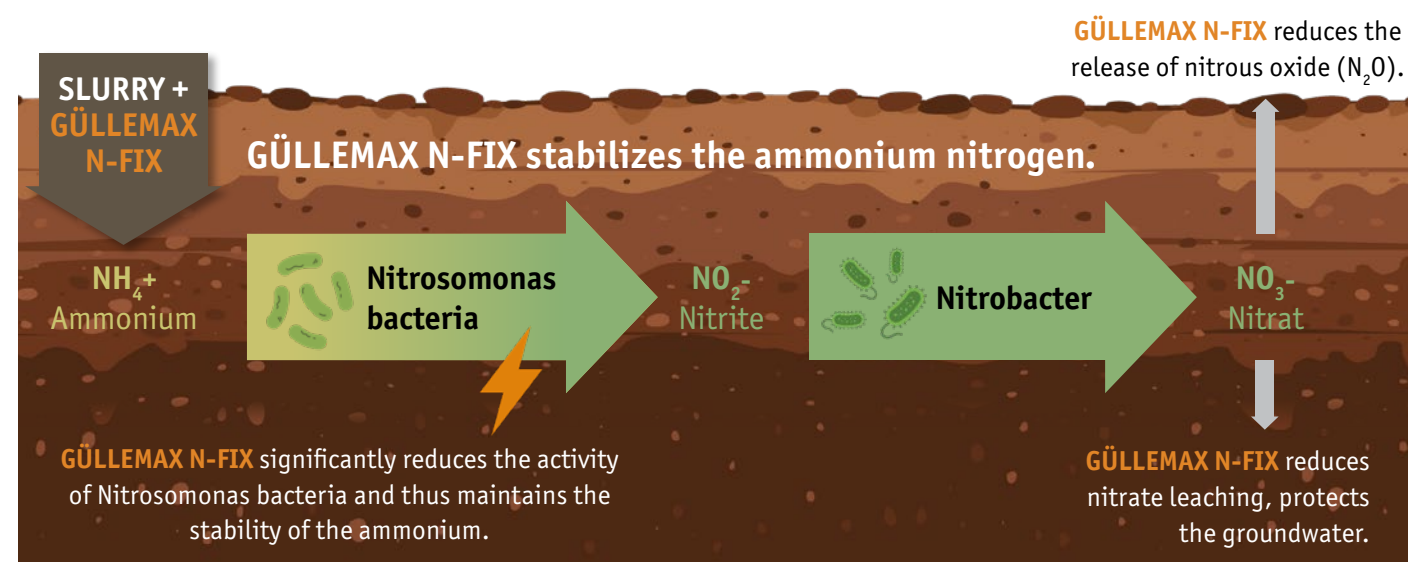
### Application

**Grassland:** 20 - 25 l/ha for each growth.

Mix POWER-N undiluted into the liquid manure tank while it is being filled using the bypass or suction nozzle.

### Pack sizes

Drum 200 l; 2 x 200 l / pallet  
Pallet tank 1000 l





- ▶ With special binding agent & essential oils
- ▶ Intensive drying and care ▶ Promotes animal welfare



Easy application with a powder spreader.

**FEINSTREU – gentle on the animal**

FEINSTREU binds enormous amounts of moisture and harmful substances and keeps the lying surface dry. With highly desirable side effects: Thanks to the powdery consistency of the

special binding agent and the selected essential oils, FEINSTREU provides effective and gentle hygiene for udders and claws.

**With a special binding agent for harmful substances**

The special binding agent added to FEINSTREU has a scaffold-like structure with cavities and channels. This structure permanently binds harmful substances.

The binding effect is enormous. For example, the binding agent in just 2 kg of FEINSTREU has an inner surface of more than 100.000 m<sup>2</sup>.



FEINSTREU sticks like powder between the claws. The selected essential oils soothe and care for both the claws and areas of skin that otherwise come into direct contact with faeces (Mortellaro prevention).

**Calf boxes, dry & healthy**

FEINSTREU dries damp calf boxes and creates hygienic bedding for the healthy development of your calves.

**Composition**

Finely ground limestone from natural deposits in Austria with essential oils and special binding agent for harmful substances.

pH value: > 9

**Fineness**

91 % below 45 µm, 50 % below 12 µm

**Application**

Litter lime for the lying and walking areas of farm animals.

Application 1 - 2 kg per LSU and week.

Also suitable for preparing a lime-straw mattress.

Further application recommendations can be found on the product label and our website.

FEINSTREU meets the requirements of regulation (EU) 2018/848 in the current version and is allowed for organic farming.

**Pack sizes**

Sack 25 kg; 42 x 25 kg / pallet  
Big Bag 1000 kg



- ▶ Helps with udder oedema ▶ Makes the udder soft
- ▶ Stimulates the flow of milk



**How does YELLOMINT work?**

YELLOMINT with natural herbs and essential oils helps quickly and effectively with udder oedema. It promotes blood circulation, stimulates milk flow and strengthens the local immune defence in the udder and teat area. The udder quickly becomes soft again and you can milk it out better.

The cream has a refreshing, softening and soothing effect.

The specially selected essential oils support the immune system and increase the cow's well-being. YELLOMINT contains a balanced mixture of nourishing oils, especially lanolin. Lanolin effectively binds moisture in the skin and is lipid-replenishing. It strengthens the skin's own protective barrier and makes the skin supple, soft and resistant. 100 % natural means no waiting time.

**3 days before and 3 days after calving**

With the start of milk production, the udder tissue must be supplied with more blood and udder oedema forms, which is quite normal. However, these water deposits in the udder tissue have far-reaching consequences. The udder oedema impairs the defence function of the teat, environmental germs can penetrate more easily and provoke mastitis. The swelling of the udder makes milking difficult and the milk remaining in the udder increases the risk of mastitis.

The enlarged, oedematous udder puts pressure on the thigh crease and increases friction between the udder and the leg, which can further develop into thigh crease eczema.

At the time of birth, the cow has her whole lactation period ahead of her. Help her to master the transition in the best possible way. This is the only way your cow will reach her potential as quickly as possible and deliver high-quality milk.

Animal care product for external use. Contains vegetable and essential oils, as well as slate oil.

**Application**

Apply YELLOMINT thinly to the udder and massage in.

We recommend that you use YELLOMINT 2 times a day, 3 days before and 3 days after calving.

Use longer if necessary.

Apply the cream only externally on the udder and not on the teats. When using more than twice a day apply a care cream between applications.

YELLOMINT meets the requirements of regulation (EU) 2018/848 in the current version and is allowed for organic farming.

**Packaging units**

Bottle 500 g, 20 x 500 g  
Dosing pump 1,5 kg; 8 x 1.5 kg / carton





- ▶ **Rapid, effective cooling**
- ▶ **Helps effectively against inflammation**
- ▶ **Regeneration of stressed joints**



AMACOOOL is easy to apply and ensures pleasant cooling

**How does AMACOOOL work?**

AMACOOOL effectively **cools** and **regenerates**. Acetic clay is an old home remedy to cool injuries. There is hardly a stable pharmacy that can do without it. The evaporation of moisture releases heat from the body.

The **herbal extracts**, which we produce according to an old Swiss recipe, support the regeneration process in the body through a balanced selection of essential and other natural oils.

**Healthy udders in the dry season**

When applied to the udder, AMACOOOL **supports the healing process during uterine inflammation** (mastitis) and is an effective supplement to veterinary treatments. AMACOOOL helps when drying off the dairy cows and **reduces the risk of udder swelling** during the dry period.

It also supports the regeneration of reddish ("liquid") udders after calving, especially in young cows. Furthermore, AMACOOOL helps to treat abnormal heat in udders. AMACOOOL has **no effect on the flavour of the milk**, meaning there are no waiting periods!

**Relieves joint swelling**

AMACOOOL helps against swelling and **cools stressed joints, tendons and muscles**. AMACOOOL supports the

regeneration of joint, tendon and muscle problems and ensures rapid well-being.

**Animal care product** for external use. Contains herbal extracts and acetic clay.

**Application**  
**Healing process of udder inflammation:** Apply a thick layer on the udder 2 - 3 times a day for a period of one week. Cools pleasantly and quickly. AMACOOOL has no influence on the taste of milk. No waiting period!  
**Drying of dairy cows:** Simply apply AMACOOOL after the last milking.  
**Cooling of swellings and leg regeneration:** Apply a thick layer twice a day. Do not apply to open wounds or mucous membranes.

AMACOOOL meets the requirements of regulation (EU) 2018/848 in the current version and is **allowed for organic farming**.

**Pack sizes**  
Tin 2,5 kg; 6 x 2,5 kg / box  
Bucket 12,5 kg



- ▶ **Softens hardened quarters again**
- ▶ **Promotes healing after udder inflammation**
- ▶ **Natural Skin Care**



**Animal care product** for external use. Contains herbal and essential oils, as well as shale oil.

**Application**  
**After udder inflammation:** Apply a thin layer to the udder and massage in 2 x daily over a period of one week.  
**For skin care:** Clean the skin thoroughly, then apply a thin layer and massage in. Excellently suited for the inner thighs of dairy cows and the navel area of young animals.

BLACKJELLY meets the requirements of regulation (EU) 2018/848 in the current version and is **allowed for organic farming**.

**Pack sizes**  
Tin 1,5 kg with dosing pump  
8 x 1,5 kg / box  
Bucket 10 l

**How does BLACKJELLY work?**

BLACKJELLY warms and promotes blood circulation while "pulling" the hardening out of the quarters. Essential and herbal oils have been used as home remedies for thousands of years and have proven effective. This knowledge about warming, blood circulation-promoting and 'pulling' herbal extracts, passed on from

generation to generation. Increases the well-being of your animals naturally. The herbal extracts, which we produce according to an old Swiss recipe, support the regeneration process in the body through a balanced selection of essential and other natural oils.

**Promotes healing after inflammation of the udder or teats**

When used on the udder, BLACKJELLY supports veterinary treatments and **promotes natural healing**, especially in **hardened quarters**. BLACKJELLY can promote the healing of eczema that

occur on the inside of the legs or base of the udder of dairy cows. BLACKJELLY has **no effect on the flavour of the milk**, meaning there are no waiting periods!

**Natural skin care**

BLACKJELLY can further be used to support the healing of skin sores. **It can be used to successfully treat cracked, split and itchy skin**. BLACKJELLY is absorbed immediately and makes hardened tissue, small scratches and scaly patches of

**skin wonderfully soft, clean and supple again**. Therefore, it can also be used for the **care of the navel** of young animals, where it also keeps flies away thanks to its natural aromas.





- ▶ Quick and sustained energy boost
- ▶ Promotes appetite and feed intake
- ▶ Highest digestibility

- ▶ Vital and healthy calves
- ▶ Quickly stops and prevents diarrhoea
- ▶ Rapid recovery of strength



An acute lack of energy causes a drop in milk yield and uneven growth of the calf.

Energy deficits occur in particular after calving and may lead to ketosis.

### The 2 + 4 formula for an immediate boost and continual supply of energy

LACTOMAX is a **balanced mixture of easily digestible sugars** that are broken down in different parts of the digestive system and thus at different rates:

- ▶ Two types of **fast-acting sugar** quickly get the cow back on its feet again
- ▶ Four types of **slowly digestible sugar** ensure a steady supply of energy is released into the bloodstream

### The benefits

- ▶ Sweet taste
- ▶ Acts fast on the beneficial gut bacteria (**prebiotic agents**)
- ▶ Contains no alcohol, **gentle on the rumen wall**

The LACTOMAX power mix **stimulates the appetite** and leads to a constant, overall higher feed intake.

This means that the animal receives the necessary nutrients from its feed. The milk yield and protein content are improved. LACTOMAX promotes the strong, steady growth of young animals.

- ▶ **Contains less raw ash** than molasses, for example, and is thus easier to digest, particularly for young animals

**Composition**  
65 % Isomaltulose Molasses;  
34,8 % Water; 0,2 % Potassium Sorbate  
**Analysis:** 0,5 % Ash; 15,8 MJ ME (beef); 10,0 MJ NEL (dairy); 14,5 MJ ME (pig)

**Application**  
**Dairy cows:** 300 - 500 g per cow per day, 2 weeks before to 6 - 8 weeks after calving.  
**Beef cattle:** 100 - 300 g per animal per day  
**Calves:** 10 g per litre of milk substitute feed  
**Sheep, goats (dams):** 50 g per animal per day  
**Breeding sows, piglets, fattening pigs:** 10 - 25 kg per ton of feed

**Pack sizes**  
Canister 10 kg (liquid)  
2 x 10 kg / box  
4 x 10 kg / box  
Pallet tank 1100 kg (liquid)



### Vital and healthy calves

STABISAN is ideal for the prevention and rapid treatment of calf diarrhoea. **Natural ingredients** stop calf diarrhoea.

Weakened calves are supplied with the **electrolytes, vitamins and herbal extracts** they need to regain their strength quickly.

### Quickly stops and prevents diarrhoea

- ▶ Natural apple pectin for **high water-binding action**.
- ▶ Lactic acid bacteria, living yeasts and mucus-producing substances for **rapid development and optimal protection of the intestinal villi** and for **healthy gut flora**.
- ▶ Yeast extracts for the complete elimination of bacteria and toxins and to increase general resistance: **natural cure for feed-related diarrhoea**.

### Rapid recovery of strength after diarrhoea

- ▶ High electrolyte content (glucose, sodium, potassium) for quick water uptake by the body and for **energy that is available fast**: rapid increase in the vitality of sick and weak calves.
- ▶ Vitamins A, D, E, C and beta-carotene for swift regeneration of damaged mucous membranes and generally **increased resistance** to ensure a fast recovery and rapid continued growth.

**Composition**  
Apple Pectin, Linseed Cake, Carob Flour, Yeast (autolyzed), Sodium Bicarbonate, Sodium Chloride, Potassium Bicarbonate

**Application**  
**To prevent diarrhoea:** Add 1 heaped measuring spoon (15 g) per meal, over a period of 1 - 7 days.  
**In the case of acute diarrhoea or as a preventative measure for purchased calves:** Add 2 heaped measuring spoons (30 g) per meal, over a period of 1 - 3 days.  
If the diarrhoea persists, we recommend that you consult a veterinarian!

**Pack sizes**  
Bucket 1 kg; 6 x 1 kg / box





- ▶ Ensures optimal youth development
- ▶ Application with the seed in one pass
- ▶ Contains the biostimulant AMALGEROL ESSENCE



AMALGEROL STARTER is spread together with the seed in one application

### Why do you need a starter fertilizer ?

At the beginning of germination, the plant is first supplied with the nutrients stored in the seeds. For the further development and the uptake of water and nutrients from the soil, the **establishment of an efficient root system** is necessary. Therefore, the plant must be optimally supplied with nutrients in this critical phase. The **availability of nutrients**, especially phosphorus, is greatly reduced at low temperatures. These conditions often occur in the wet and cold weather in spring.

The fertilizer is spread in one application when sowing the seeds. The micro-granulation guarantees an even distribution of the nutrients in the seed band. This has the advantage that the fertilizer is deposited directly next to the seed, exactly where the nutrients are needed.

**If you see a shortage, you have already lost revenue !**

### AMALGEROL STARTER gives you a head start in growth !

- ▶ AMALGEROL STARTER **supplies the seedling** with the important nutrients nitrogen, phosphorus, zinc and iron in sufficient quantities.
- ▶ Suitable for all row crops such as corn, pumpkin, soy, sugar beet, sunflower, field vegetables and potatoes.

- ▶ AMALGEROL STARTER contains the Biostimulant AMALGEROL ESSENCE

**AMALGEROL ESSENCE** promotes root formation, activates soil life and optimizes the supply of nutrients and water.

**Composition**  
 5 % AMALGEROL ESSENCE  
 5 % Nitrogen (N)  
 24 % Phosphorus (P<sub>2</sub>O<sub>5</sub>)  
 0,6 % Potassium (K<sub>2</sub>O)  
 1,7 % Calcium (CaO)  
 8,9 % Magnesium (MgO)  
 1,2 % Sulphur (SO<sub>3</sub>)  
 0,7 % Iron (Fe)  
 2 % Zinc (Zn)

**Granulate size :** 0,5 - 2,0 mm

### Application

**Row crops** (corn, pumpkin, soy, sugar beet, sunflower, field vegetables, and potatoes) : Add 15 - 20 kg/ha to the seedbed during sowing.

**Turf :** 15 - 20 kg/ha with the microgranulate spreader.

### Pack sizes

Bag 20 kg ; 40 x 20 kg / pal.



AMALGEROL ESSENCE works in the soil and when applied foliar to the plant

### Why do biostimulants play an important role in successful agriculture?

Yields have increased significantly in recent decades thanks to developments in breeding, plant protection and fertilization.

However, there are **many negative influences and stress factors** where these measures cannot help.

These include unpredictable weather events such as **drought, heat, late frosts, heavy rain** or **side effects of plant protection** itself.

**Soil compaction, erosion, lack of humus and salinization** are other major threats, as only **healthy and fertile soil creates the conditions for plant growth.**

**Biostimulants** based on **natural raw materials** can therefore make an important contribution to a **successful and sustainable agriculture** by **protecting the plant from stress** and **promoting the activation of the soil.**

### AMALGEROL ESSENCE - the biostimulant

AMALGEROL ESSENCE is a biostimulant made up of many components and **helps the plant in difficult situations.** It **works both in the soil and when applied in foliar form** on the plant itself.

### AMALGEROL ESSENCE in the soil

- ▶ **activates soil life** and **improves soil structure**
- ▶ **promotes root growth**
- ▶ **increases water storage**

### AMALGEROL ESSENCE on the leaf

- ▶ **protects the plant from stress**
- ▶ **neutralizes stress molecules** with antioxidants
- ▶ **regenerates the plants** after a stress event

**Composition**  
 3 % Nitrogen (N)  
 3 % Potassium Oxide (K<sub>2</sub>O), water-soluble  
 39 % Organic Matter  
 (corresponds to 75 % in DM)

**pH value:** 5 - 6

**Specific weight:** 1 l = 1,23 kg

### Application

Liquid organic fertilizer for foliar and soil application. Generally use 3 l/ha in at least 250 l water according to the crop specific application recommendation (see product label and our website). Additional applications are recommended under increased stress e.g. shortly before or after drought or frost.

**AMALGEROL ESSENCE** meets the requirements of regulation (EU) 2018/848 in the current version and is **allowed for organic farming.**

### Pack sizes

Canister 15 l; 45 x 15 l / pallet  
 Pallet tank 1000 l





# WHY AMALGEROL ESSENCE AS A BIOSTIMULANT?

## LEAF EFFECTS

- Antioxidants neutralize stress molecules
- 🌿 Herbal Extracts strengthen the immune system
- N K Organic K & N as leaf nutrients
- 🧬 Amino Acids for active cell repair

### Strengthens the leaf tissue

AMALGEROL ESSENCE contains potassium and organic nitrogen in the form of amino acids. Potassium strengthens the leaf tissue, which is thus **less susceptible to diseases**. The amino acids ensure optimal protein metabolism and high growth rates. Both increase the yield.

### Strengthens and protects against stress

Our crops are exposed to numerous stress events (Extreme temperatures, drought, soil stress, chemical stress, pathogens) throughout their development. Especially in important development phases such as youth development, flowering and fruit set, **AMALGEROL ESSENCE protects the plants better against stress (preventive)**. After a stress event, the plant recovers faster (curative).

### Promotes root growth

AMALGEROL ESSENCE stimulates the formation of fine roots with natural plant hormones from marine algae. With a well-developed root system, the soil's **potential can be optimally utilised**. Available nutrients can be absorbed efficiently and ensure strong growth. Especially in dry phases, a larger root system can absorb more water. **This minimises yield losses.**

### Activates the soil life

An active soil is crucial for good plant growth. AMALGEROL ESSENCE promotes soil life and humus build-up and thus **optimises the nutrient and water supply**. Additionally the activated soil life leads to an improved crumb structure of the soil. AMALGEROL ESSENCE thus also supports root growth in this way. A powerful synergy for better soil.

## SOIL EFFECTS

- 🌱 Plant Hormones promote root growth
- 💧 Alginate improves water retention
- 🌱 Organic carbon activates the soil life

## This is why biostimulants play an important role in successful agriculture

A vital and fertile soil creates the conditions for healthy plant growth. There are many negative influences and stress factors where plant protection and fertilisation can do nothing.

Biostimulants based on **natural raw materials** can therefore make an important contribution to **successful and sustainable agriculture** by **protecting the plant during stress and promoting the activation of soil life.**





# Frost

# Effective protection

# AMALGEROL ESSENCE

## Why does frost pose a danger?

When **fruit crops** such as apple, cherry, apricot and grapevine start growing again **in spring**, the buds swell and **lose their ability to withstand very low temperatures**.

The **risk is even greater** if growth is strongly **stimulated by warm temperatures** at the beginning, followed by a **temperature drop**.

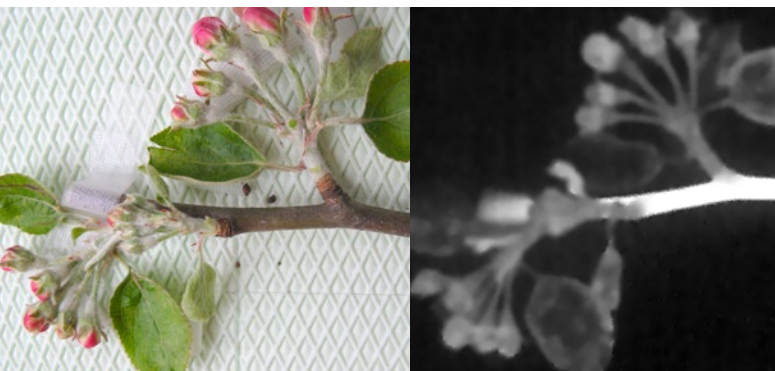
### Protection of frost-susceptible buds is crucial

**The more developed the buds are, the less frost-hardy they are.** Even higher temperatures are critical and can cause potential damage.

In a **severe frost event with very low temperatures**, **all fruit buds are killed**. But often the frost damages only some of the flowers, like the **most developed ones or the flowers near the ground**.

### The most vulnerable part of the flower

Not all parts of the flower are equally affected by frost - the **pistil and ovary are the most vulnerable**. If these are **damaged by frost**, they **turn black after a short time**. **Damaged flowers will not develop further and will not produce a fruit**.



Severe frost damage also damages stamens and other parts of the flower.

Freezing is shown by bright spots with an infrared camera in the frost lab. Once the freezing process has started, the ice spreads throughout the apple branch.



## How do you protect your crops from frost?

### Prevention:

Ideally, AMALGEROL ESSENCE is applied before the frost event.

It reduces the formation of ice on the plant. This increases the survival rate of the buds.

### Regeneration:

Apply as quickly as possible with one repeat. AMALGEROL ESSENCE nourishes the surviving plant tissue. This facilitates regeneration and compensates for frost damage.





# Phytotoxicity

## How does phytotoxic damage occur?

The crop protection products used are in themselves well adapted to the respective crop. In practice however phytotoxic damage on crops often occurs after herbicide treatments and affect the crop plants.

### What are the effects of this damage?

In the best case, it is only small-scale yellowing that disappears after a few days and has no effect on the yield. However, in the case of more severe phytotoxicity, the plants cannot recover and there may be a decline in yield and/or loss of quality.

### Increased risk is to be expected in the following cases:

- Wrong choice of product
- Too high a dosage
- Spray residue in the tank
- Unfavourable weather conditions during application
- Herbicide drift

### Examples of herbicide damage:



Pre-emergence technology: Flurochloridone on sunflower



Post-emergence technology: Tribenuron-methyl on Clearfield sunflower technology (Imazomox resistant)

# Effective protection

## Field trial - Herbicide stress

The **regenerative effect of AMALGEROL ESSENCE on phytotoxic damage** after herbicide application in sunflowers was investigated in a field trial.

The treatment with **AMALGEROL ESSENCE** took place **6 days after herbicide application at a dose of 2 l/ha**. The further development of the crop was observed at intervals of 1 and 3 weeks.

The results were very impressive.

The **plants treated with AMALGEROL ESSENCE** showed a **clear recovery after only a few days** and no later than 3 weeks after treatment **plants developed very well** and had a **clear growth advantage**.

## Active regeneration



### 14 days after herbicide treatment

Clearly visible phytotoxic damage in the untreated control group. (left)  
The sunflower plants treated with AMALGEROL ESSENCE show almost no visible damage anymore. (right)

## Little to no yield loss



### 4 weeks after herbicide treatment

The sunflowers treated with AMALGEROL ESSENCE have developed very well and are clearly larger (right). The untreated control group still shows yellowing (left) and has lagged behind in development. Substantial yield losses are to be feared.

## How do you protect your crops from phytotoxic damage?

### Prevention:

AMALGEROL ESSENCE can also be applied during herbicide application, reducing the risk of phytotoxic damage. It is readily miscible and well tolerated with the most common herbicides\*.

\*If several products are used in a tank mixture, however, interactions may occur. The performance of mixing and compatibility tests is therefore recommended.

### Post-treatment:

If phytotoxic damage develops after treatment, treat your crop with AMALGEROL ESSENCE to **avoid lasting damage and to safeguard the yield**.





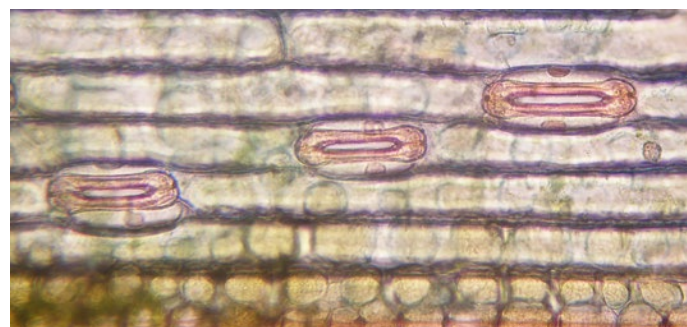
# Drought stress

## How does the plant react to drought stress?

During their development, plants have developed effective mechanisms to survive temporary or prolonged periods of drought. These include **anatomical adaptations** such as leaves with thick cuticle, small leaves, formation of hairs as protection against evaporation and overheating, but also many physiological adaptations. And a **well-developed root system is crucial**.

Short-term dry spells are a major stress for plants. In agriculture, drought stress is one of the major causes of reduced yields or even complete crop failure.

Plants can **react very quickly to drought stress and control water release**. The so-called stomata are located on the leaf surface. The plant can control the opening state and thus the amount of water released (see illustration for oats).



Open stomata: Water release - water loss



Closed stomata: no water loss

At the cellular level, **many molecules** such as carbohydrates, antioxidants but especially amino acids (e.g. proline) **are accumulated** to protect the living cells.

However, closing the stomata also reduces the uptake of CO<sub>2</sub>. This is problematic because the plant can no longer fully utilise the absorbed sunlight in photosynthesis. This creates **oxygen radicals that can damage the cells** and must therefore be rendered harmless.

# Effective protection

**AMALGEROL ESSENCE** has been proven to reduce drought stress in tomato plants.

AMALGEROL ESSENCE has been successfully used in agriculture for many years to **strengthen plants and better protect them from stress**.

To test this known positive effect, a **scientific trial was conducted at the Vegenov Institute in France**.



In this trial, tomato plants were treated differently in the greenhouse:

- (1) Optimal supply of water: no stress.
- (2) Reduction of the amount of water to 50 %: Drought stress
- (3) Reduction of water supply to 50 %: Drought stress + treatment with AMALGEROL ESSENCE.

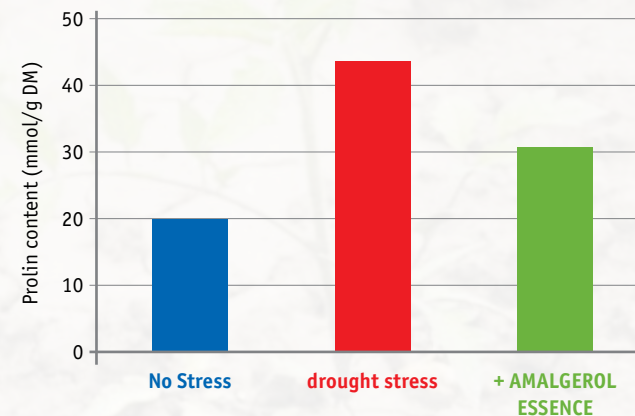
### How do you know if a plant is stressed?

From scientific studies have shown that stress leads to an accumulation of the amino acid proline in all plants. This amino acid fulfils a variety of tasks in the defence against stress. **Proline is therefore a biochemical marker for screening stress**.

**Less stress.** The result of the measurements was very impressive. Plants treated with Amalgerol Essence were significantly less stressed than the plants with drought stress. Another factor measured was **stomatal conductivity**. This can be used to determine how much water the plant loses through the stomata. In the stressed plants there was a strong reduction down to 35 %. In plants treated with AMALGEROL ESSENCE, however, the reduction to 55 % was significantly lower.

**No yield loss.** While the plants with drought stress showed strong yield losses, the **yield with AMALGEROL ESSENCE was almost identical to that of the optimally supplied plants**.

### Less stress

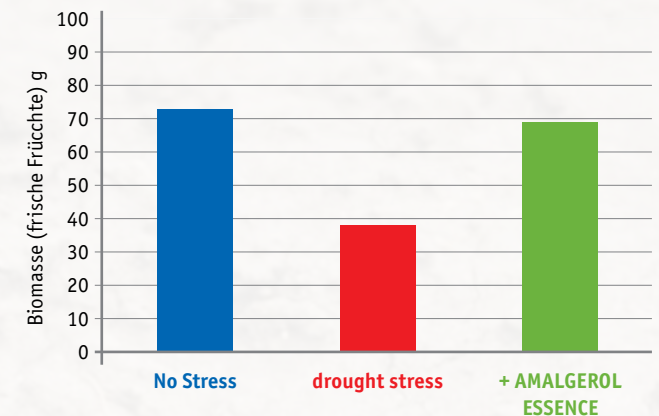


The content of the amino acid **proline increases strongly in the cells of stressed plants**.

In plants treated with **AMALGEROL ESSENCE**, the **increase is significantly lower**, indicating that the plant has less stress.

# AMALGEROL ESSENCE

### No loss of yield



The drought stress led to a reduction in yield of almost half in the untreated tomatoes.

Whereas plants treated with **AMALGEROL ESSENCE**, had practically **the same yield as the plants optimally supplied with water**.

## How does AMALGEROL ESSENCE help with drought stress?

- ▶ **Better water supply** through increased root growth and optimal soil structure (prevention)
- ▶ Osmolytically active substances (carbohydrates, amino acids) for **increased cell integrity**
- ▶ Antioxidants for **defence against oxygen radicals**





- ▶ Polyphosphate with nitrogen
- ▶ Acts quickly and safely through the leaf
- ▶ For youth development, flowering and fruit-bearing stages

**Why do plants need a foliar phosphorus fertilizer?**

Phosphorus is not very mobile in the soil. The phosphorus molecules move only 2-3 mm per year! Unfavourable pH values, soil compaction, drought and poor root development lead to an insufficient supply and the plants begin to display signs of a phosphorus deficiency.

**POWERPHOS** allows you to compensate for this deficiency quickly and precisely through foliar fertilization.

**POWERPHOS - the ideal phosphorus**

- ▶ Fertilization with phosphorus is possible at any time, regardless of soil properties, pH value and weather
- ▶ Ideal for any situation where more phosphorus is required
- ▶ Contains polyphosphate, the most effective form of phosphorus
- ▶ Also contains 10 % nitrogen



**POWERPHOS in grasslands**

High quality basic forage also requires phosphorus for healthy animals and a high milk yield.

- ▶ Not enough phosphorus in the cattle slurry
- Mix **POWERPHOS** into the liquid manure and apply it - the easiest and fastest way to supplement phosphorus in grasslands.
- ▶ No additional application costs



**POWERPHOS in farmland**

During early development, plants need a large amount of phosphorus quickly

- ▶ higher metabolism
- ▶ the root system is still small
- Before flowering to ensure a good yield
  - ▶ for better grain formation
  - ▶ for better tubers (e.g. potatoes)

**Composition**  
10 % Ammonium Nitrogen (N) 138 g/l  
34 % Phosphate (P<sub>2</sub>O<sub>5</sub>) 469 g/l, water-soluble

**pH value:** 6 - 7

**Specific weight:** 1,38 kg/l

**Application**  
**Grassland:** 20 - 30 l/ha for the first growth, 10 - 15 l/ha for each subsequent growth. Mix into the liquid manure.  
**Farmland:** 5 l/ha and application. Crop specific application recommendations can be found on the product label and our website.

**Pack sizes**  
Canister 10 l; 75 x 10 l / pallet  
Drum 200 l; 2 x 200 l / pallet  
Pallet tank 1000 l



**Why do plants need potassium and sulphur?**

Potassium plays a decisive role in the metabolism of the plant, especially in the carbohydrate metabolism, in protein formation and in the regulation of the water balance.

Potassium **strengthens the leaf tissue, increases the stability of grain, improves shelf life** and makes the plant **more resistant to stress**.

In growth stages with a high need for potassium, the supply from the soil is usually insufficient.

Now you need **KALIMAX**, either as a leaf spray or via irrigation.

**KALIMAX** contains furthermore a **high proportion of sulphur**. This nutrient is a vital element for building protein and **increases nitrogen efficiency**. The sulphur is present as thiosulfate.

In this form, part of the sulphur is **quickly available** as sulfate, however the **effect lasts over several weeks**.

**KALIMAX - the efficient potassium and sulphur fertilizer**



- ▶ High in potassium and sulphur, **immediately available to the plant**
- ▶ Chloride-free and therefore suitable **supplying chlorine-sensitive crops with potassium**
- ▶ **Increases the availability of the nutrients iron and manganese**
- ▶ **100% water-soluble**
- ▶ **Suitable for fertigation and foliar fertilization**

- ▶ Efficient potassium & sulphur fertilization
- ▶ Regulates water balance, strengthens tissue
- ▶ Improves nutrient availability

**Composition**  
25 % Potassium (K<sub>2</sub>O) 365 g/l, water-soluble  
17 % Sulphur (S) 248 g/l

**pH value:** 7,5 - 8,5

**Specific weight:** 1,45 kg/l

**Application**  
Application rate generally 5 l/ha and application. Crop specific application time recommendations can be found on the product label and our website.

**Pack sizes**  
Canister 10 l; 75 x 10 l / pallet  
Pallet tank 1000 l





- ▶ Active sulphur and ammonium
- ▶ Increases the effect of UAN
- ▶ Supports straw decomposition



### Why do plants need nitrogen and sulphur?

As one of the three main nutrients, nitrogen plays a crucial role in protein metabolism and photosynthesis. Plants can absorb nitrogen in the form of nitrate and ammonium. Plants can utilize nitrate very well, but due to its high mobility and solubility it can be very easily washed out. A nitrogen deficiency can also occur with the increased nutrient requirements during growth phases.

**SULFO-N quickly delivers available ammonium** and thereby helps to **compensate for a lack of nitrogen**.

**SULFO-N** also contains a **high proportion of sulphur**. This nutrient is a vital element for building protein and **increases nitrogen efficiency**. The sulphur is present as thiosulfate. In this form, part of the sulphur is **quickly available** as sulfate, however the **effect lasts over several weeks**.

### SULFO-N is the ideal product for combined nitrogen-sulphur fertilization



- ▶ High nitrogen and sulphur content, **immediately available to the plants**
- ▶ Improves the efficiency of nitrogen fertilization
- ▶ Source of readily available ammonium nitrate and sulfate
- ▶ Increases the availability of the nutrients iron and manganese

**Composition**  
12 % Ammoniacal nitrogen (N) 160 g/l  
26 % Sulphur (S) 346 g/l

**pH value:** 8 - 9

**Specific weight:** 1,33 kg/l

#### Application

Crop specific application time recommendations can be found on the product label and our website. Do not mix with herbicides, oils and strongly acidic products. Not for crops under glass / under foil. Do not use in the germination stage.

#### Pack sizes

Canister 10 l; 75 x 10 l / pallet  
Drum 200 l; 2 x 200 l / pallet  
Pallet tank 1000 l



- ▶ Improves nitrogen availability
- ▶ Promotes the availability of phosphorus
- ▶ Reduces scab and fungal attacks



**Composition**  
90 % sulphur (S), elemental  
Adjuvant: bentonite

#### SULFOGRANULAT

**Granulate size:** 2 - 4 mm  
**Bulk weight:** 1,22 kg/l

#### SULFOLINSEN

**Granulate size:** 2 - 5 mm  
**Bulk weight:** 1,15 kg/l

#### Application

For distribution with a fertilizer spreader.

#### Farmland:

Apply 25 - 50 kg/ha before sowing. Work in gently if possible. Crop specific application recommendations can be found on the product label and our website.

#### Grasslands:

25 - 50 kg/ha at the beginning of the vegetation period.

**SULFOGRANULAT and SULFOLINSEN** meet the requirements of regulation (EU) 2018/848 in the current version and **are allowed for organic farming**.

#### Pack sizes

Sack 25 kg; 40 x 25 kg / Pal.  
Big Bag Sulfogranulat 1.000 kg  
Big Bag Sulfolinsen 1.100 kg

### The importance of sulphur for farmland and grasslands

Sulphur is essential for healthy plants and a high yield.

#### NITROGEN needs SULPHUR.

The plant cannot utilize nitrogen without sufficient sulphur. The **nitrogen - sulphur ratio should be approximately 10:1**. The combination of sulphur deficiency and high nitrogen applications also leads to an undesirable accumulation of nitrate in the plant. **Sulphur forms protein, gluten and oil content** and

brings flavour to vegetables. Sulphur increases the feed value in the basic forage, which means **more milk from grass and clover**. However in the last decades, sulphur deficiency has become **one of the most common deficiencies in Central Europe**.

**Therefore fertilisation with sulphur has become urgently necessary.**

### Inexpensive basic fertilization with elemental sulphur

**Elemental sulphur** becomes available to the plants through bacterial activity in the soil.

The **effect is long-lasting** and there is **no loss through leaching**.

### The benefits of SULFOGRANULAT and SULFOLINSEN

- ▶ For all arable crops, special crops and grasslands
- ▶ Long-lasting sulphur fertilisation
- ▶ Lowers the pH value for all crops that require acidic soil
- ▶ Strengthens soil resistance against soil-borne fungal diseases (e.g. scab, rhizoctonia)
- ▶ If the soil is sufficiently moist, the smell of sulphur can also keep away wild boars and mice





- ▶ Granulated lime from marine deposits
- ▶ Over 90 % reactivity according to LUFA
- ▶ Fast-acting calcium



**Why is it necessary to fertilize grasslands with lime?**

Intensively used grasslands develop an increasing acidification of the soil due to the calcium loss caused by removing the harvested crop and the leaching of cations. Fertilisation with farm manure such as liquid manure and mineral fertilisers also have an acidic effect. Soil acidification has many negative effects that reduce the yield.

Lime has a **positive effect on the soil structure** and thereby increases the

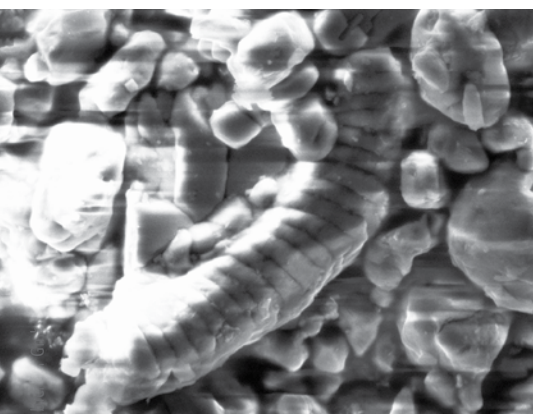
porosity and **water storage capacity of the soil.**

The **soil organisms that are important for soil fertility** need a soil that is well supplied with lime. At low pH values, the availability of many nutrients decreases. **In order to maintain a productive stock of high-quality forage grasses in the long term, this must be compensated with lime fertilisation.**

**Why is MEERKALK so effective?**

The source rock for **MEERKALK** is of a younger age and therefore less compact than conventional rock limestone.

This can be seen very impressively under a scanning electron microscope (see illustration).



Original organic structures can still be seen clearly.

Due to this **high porosity** and the **very fine degree of grinding**, MEERKALK has a high reactivity. The plants can absorb the calcium easily, and it takes effect very quickly in the soil.

**What MEERKALK can do**

- ▶ Covers the calcium needs of the plants
- ▶ Rapid pH value increase in the germination horizon
- ▶ Binds moisture in the root zone
- ▶ For high milk yield and healthy cows

**Composition**  
51 % CaO calcium oxide, total (corresponds to 91 % CaCO<sub>3</sub> calcium carbonate, total)  
51 % alkaline active ingredients (evaluated as CaO calcium oxide)

**Bulk weight:** 1,28 kg/l

**Application**  
500 kg/ha for meadows, pastures and fields; 8 - 12 kg/100 m<sup>2</sup> for lawn and garden.

**MEERKALK** meets the requirements of regulation (EU) 2018/848 in the current version and is **allowed for organic farming.**

**Pack sizes**  
Sack 25 kg (road train 23.1 tons)  
Big Bag 600 kg (road train 24 tons)



**Additionally with quickly available sulfate sulphur**

Granules ensure low-dust application

**Why is it necessary to fertilize grasslands with lime and sulphur?**

Intensively used grasslands can develop increasingly acidic soil. Acidification has many causes, such as calcium deprivation by the harvested crop or leaching. Fertilisation with liquid manure and mineral fertilisers also acidifies the soil. Acidification of the soil has many negative effects such as deterioration of the soil structure, deficiency of important nutrients and inhibition of soil organisms.

**In order to maintain a productive stock of high-quality forage grasses in the long term, this must be compensated with lime**

**fertilisation.**

**Sulphur is essential for healthy plants and high-yield harvests.** Optimal utilisation of nitrogen is only possible when there is sufficient sulphur. The ratio between nitrogen and sulphur should be approximately 10:1.

However, sulphur deficiency has become one of the most common deficiencies in Central Europe.

**Sulphur increases the feed value in the basic forage, which means more milk from grass and clover.**

**Why is MEERKALK S+ so effective?**

The source rock for **MEERKALK S+** is of a younger age and therefore less compact than conventional rock limestone. Due to this **high porosity** and the **very fine degree of grinding**, MEERKALK S+ has a very high reactivity. The plants can absorb the calcium easily, and it takes effect very quickly in the soil.

MEERKALK S+ contains 2 different forms of sulphur. Sulphate sulphur is

readily available and supplies the plant at the start of the vegetation phase. Elemental sulphur is not water-soluble and requires bacterial activity in the soil to become available to the plants. Therefore, the sulphur effect of MEERKALK S+ is long-lasting and up to 4 times better than with conventional sulphate fertilisers.

**Why MEERKALK S+?**

- ▶ Lime and sulphur fertilisation
- ▶ Covers the calcium needs of the plants
- ▶ Rapid pH value increase in the germination horizon

- ▶ Supply of sulphur for optimal nitrogen utilisation
- ▶ Long-lasting effect of sulphur fertilisation

**Composition**  
42,6 % CaO calcium oxide, total (corresponds to 76,1 % CaCO<sub>3</sub> calcium carbonate, total).  
37,5 % alkaline active ingredients (evaluated as CaO calcium oxide)  
10 % Sulphur (S), total  
7 % Sulphur, elemental  
3 % Sulphur, sulphate

**Bulk weight:** 1,27 kg/l

**Application**  
Farmland 300 kg / ha  
Grasslands 200 - 300 kg / ha

**MEERKALK S+** meets the requirements of Regulation (EU) 2018/848 in the current version and is **allowed for organic farming.**

**Pack sizes**  
Big Bag 600 kg (road train 24 tons)





## SLURRY TREATMENT & STABLE HYGIENE

### GÜLLEMAX

- ▶ Improves stable air
- ▶ Promotes rotting
- ▶ Increases the basic forage quality

### STALLMAX

BIO 

- ▶ Ecological compatible variant of GÜLLEMAX

### FEINSTREU

BIO 

- ▶ With special binding agent & essential oils
- ▶ Intensive drying and care
- ▶ Promotes animal welfare

## ANIMAL CARE & FEED

### AMACOOOL

BIO 

- ▶ Rapid, effective cooling
- ▶ Helps effectively against inflammation
- ▶ Regeneration of stressed joints

### BLACKJELLY

BIO 

- ▶ Natural Skin Care
- ▶ Promotes healing after udder inflammation
- ▶ Softens hardened quarters again

### YELLOMINT

BIO 

- ▶ Helps with udder oedema
- ▶ Makes the udder soft
- ▶ Stimulates the flow of milk

### LACTOMAX

- ▶ Quick and sustained energy boost
- ▶ Promotes appetite and feed intake
- ▶ Highest digestibility

### STABISAN

- ▶ Vital and healthy calves
- ▶ Quickly stops and prevents diarrhoea
- ▶ Rapid recovery of strength

## NEU IM SORTIMENT

NEW

DMPP-based nitrification inhibitor

maximises the nitrogen efficiency in your slurry

### GÜLLEMAX N-FIX

- ▶ Stabilise ammonium nitrogen
- ▶ Optimise plant availability
- ▶ Protect the environment

## BIOSTIMULANTS & FERTILIZERS

### AMALGEROL STARTER

- ▶ Ensures optimal youth development
- ▶ Application with the seed in one pass
- ▶ Contains the biostimulant AMALGEROL ESSENCE

### AMALGEROL ESSENCE

BIO 

- ▶ Protects against weather, soil and chemical stress
- ▶ Strengthens roots and immune system
- ▶ For a reliable yield in any situation

### POWERPHOS

- ▶ Polyphosphate with N
- ▶ Acts quickly and safely through the leaf
- ▶ For youth development, flowering and fruit-bearing stages

### POWER-N

- ▶ Optimal nitrogen-sulphur ratio
- ▶ 3 types of nitrogen
- ▶ Long-lasting effect

### KALIMAX

- ▶ Efficient potassium & sulphur fertilization
- ▶ Regulates water balance, strengthens tissue
- ▶ Improves nutrient availability

### SULFO-N

- ▶ Active sulphur and ammonium
- ▶ Increases the effect of UAN
- ▶ Supports straw decomposition

### MEERKALK

BIO 

- ▶ Granulated lime from marine deposits
- ▶ Over 90 % reactivity according to LUFA
- ▶ Fast-acting calcium

### MEERKALK S+

BIO 

- ▶ With 10 % elemental sulphur
- ▶ Over 90 % reactivity according to LUFA
- ▶ Binds moisture in the root zone

### SULFOGRANULAT SULFOLINSEN

BIO 

- ▶ Improves nitrogen availability
- ▶ Promotes the availability of phosphorus
- ▶ Reduces scab and fungal attacks



The products marked with **BIO** comply with Regulation (EU) 2018/848 as amended and are approved for organic farming.



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