



## Instructions

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## Explanatory notes

Take advantage of biostimulation with the Penergetic technology for accelerated decomposing and better in-barn environment.

penergetic k is a rotting agent for compost and bedding. The product promotes the degradation of organic matter and accelerates the rotting process (rotting = aerobic process // putrefaction = anaerobic process).

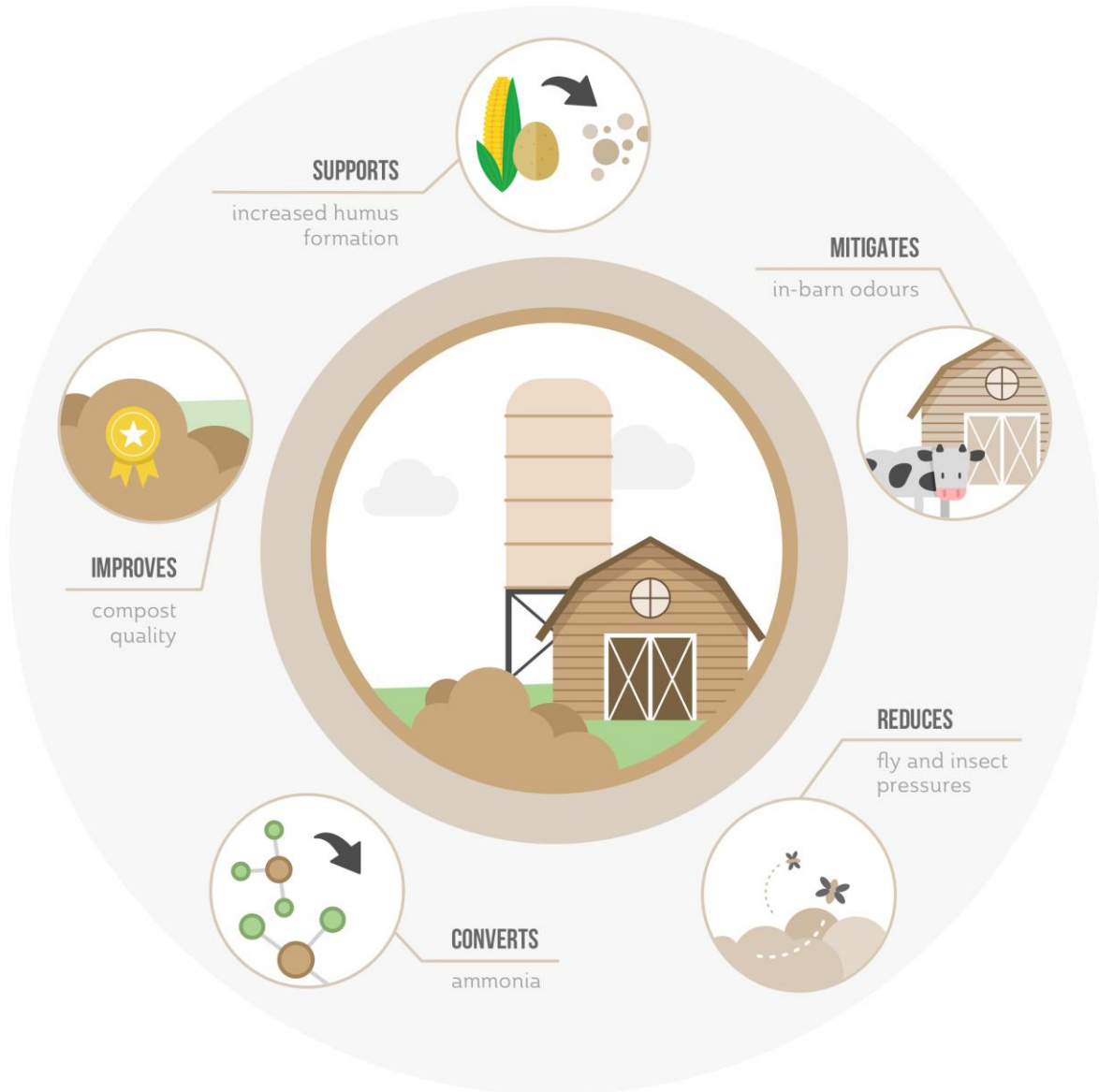
In animal houses it improves the sanitation and climate.

The product reduces the unpleasant odour from compost, manure to a natural level. The composting process itself is accelerated and optimized, the final product (humus) becomes enriched by the aerobic rotting processes.


## Benefits

- Quality improvement of the compost
- Stimulates the composting process
- Stabilises rotting processes
- Improves stable climate
- Reduced ammonia emissions
- Supports increased humus formation
- Improves compost quality
- Mitigates in-Barn odours
- Reduces fly and insect pressures
- Accelerated development
- Less machinery work needed
- Reduced environmental pollution


## Mode of action



## Product data

Carrier material		Package		Shelf life
	Bentonite	Box	200 gr	5 Years
		Bucket	2.5 kg / 10 kg	
		Bag	8 kg	

*We offer further carrier material, please ask us*

	Molasses	Canister	2.5 lt / 10 lt	18 Months
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*We offer further carrier material, please ask us*

Product forms	Article no.	Note
penergetic k Standard	3800	For compost
penergetic k Stable bedding	3850	For bedding and better in-barn climate

*Further specific products on request*

## Application

The following doses are recommended by Penergetic International AG. These are general recommendations that need to be adapted according to local conditions. Factors like weather, climate, compost composition etc. can influence the product efficacy.

**Do not mix the products with oily substances.**

Application:

The Penergetic products can be combined with other products (farmyard manure, horn, blood and bone meals, composting additives or other chemical / biological products.) However, the instructions from the manufacturers of the individual products must be adhered to. If necessary, a trial mix can be prepared. For optimal results we recommend applying the product regularly.

**For the compost:**

Dry application

For dry application, it is best to mix penergetic k with sand, clay or soil. Then apply equally to the compost layers.

Liquid application

For liquid application, dissolve penergetic k in water and pour over the existing heap. When the heap is no longer to be turned, poke several holes into the heap and pour penergetic k into these holes.

**In the barn / stable:**

Before the animals are housed:

Start in the empty barn. Never scatter on top of existing bedding. After cleaning the houses, apply 6 gr of penergetic k per sqm. on the floor and, if possible, spray it (mixed with water) on the walls.

After the house has dried out, scatter the bedding repeat the application and spray 6 gr of penergetic k per sqm. over the bedding. If the animals are not kept in cages but can roam in the barn, the droppings pit and the scratching area must both be treated equally.

**Important: Use regularly**

You will find further information and instructions for carrying out trials at the end of this document.

## Compost and heaps

### Creating the right compost mixture

In order to convert organic matter back to plant-available nutrients, microorganisms require nitrogen. The C-N ratio (carbon and nitrogen) within the organic waste intended for composting and fermentation thus needs to be suitable.

(It is important to mix the different organic substances well!)

The carbon-nitrogen ration of different organic substances in the dry matter

Organic matter	Carbon	Nitrogen
Urine	0.8	1
Dung liquor	2-3	1
Fecal matter	6-10	1
Green crop	5-15	1
Black soil	5-20	1
Manure compost	10-20	1
Grass cuttings	10-15	1
Feces of farm animals	10-15	1
Solid manure	10-15	1
Legume straw	10-20	1
Lucerne / intermediate crop	15-25	1
Fresh manure with low straw content	20-25	1
Kitchen waste	20-25	1
Manure with high straw content	25-30	1
Black peat	30-440	1
Municipal waste	30-40	1
Tree foliage	30-50	1
Grain bran	30-50	1
Spelt	50-80	1
Cereal straw	50-150	1
Rotted saw dust	150-250	1
Saw dust	250-500	1

A C-N ratio of 15:25 parts carbon to 1 part nitrogen is ideal for microbial conversion. If the C-N ratio of the mix is too great, add nitrogenous organic matter (oilcake, animal feces...)

**Composition example:**

50 % organic waste (e.g. leaves, garden and kitchen waste)

30 % straw / manure, slurry

20 % various materials

(e.g. herbage, weed, shavings)

60 % organic waste

20 % animal residues (hair, rumen, bones, slurry)

20 % various materials (e.g. paper / carton / straw)

**Crude and mature compost**

Crude compost: After just 3 to 5 months the compost has rotted enough to be considered "crude compost". This compost can be used for mulching. It usually still contains some coarser bits but also already has some humus and plenty of microorganisms that can revitalize old and depleted garden soil.

This crude compost can be used to fertilize trees, shrubs or also plants with a high nutrient demand. The crude compost is not worked into the ground like the mature compost described below, but is applied to the top layer of the soil.

Mature compost: After about 1 to 3 weeks the compost will be mostly rotted through, the compost has matured. This mature compost is ideal for fertilizing or, after separating out coarser bits that have not rotted with a compost sifter, for improving the soil.

This relatively finely crumbed, nutrient-rich mature compost should be applied in a 1-cm layer to garden beds and then thoroughly raked in using a grubber or rake. The mature compost revitalizes even depleted garden soil and improves its structure.

**How can composting be accelerated further?**

Maturing of the compost can also be accelerated by turning over the compost every 3, 6 or 12 months. This makes it mature and rot through quicker.

- When turning the compost, penergetic k can be added to speed up the process.

### **Chicken manure heaps**

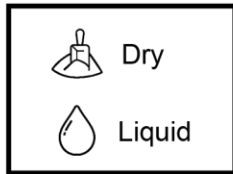
The chicken manure should be stored indoors. The feces can be mixed with 15 to 20 % of shredded material. The heap should not be higher than 1.20 m and not wider than 2.50 m at the bottom. The core temperature should not be higher than approx. 60 - 65° C.

Ideally, the heaps should be turned twice after 10 days. After that they can be moved outdoors.

- Each new layer should be treated with penergetic k while building a compost heap.
- In existing compost heaps, which are no longer going to be turned, poke several holes into the heap and pour in penergetic k.
- An ideal way of adding penergetic k is during turning of the heap.



## Usage recommendation



penergetic k  
6 gr / m<sup>2</sup>

or



penergetic k  
6 ml / m<sup>2</sup>

repeat after adding new  
bedding or after 15 days



penergetic k  
50 gr / m<sup>3</sup>

or



penergetic k  
50 ml / m<sup>3</sup>



## Test design

The simplest test design consists of two series of tests, one with Penergetic and one without (control). To get the best results consider the following instructions.

### Prevention measures against unwanted transfer of effects

- Penergetic products possess the ability to transfer their effects to their environment. A glass, for instance, having contained a Penergetic product can transfer its effect characteristics to its next contents, even after thorough cleansing. In order to rule this out it is essential to use separate jars, spray can and utensils, marked in detail, throughout the entire duration of the test.
- If working with machines, do first the control area. Then mixing the Penergetic products in the sprayer or tank and apply it on the test (Penergetic) area. After that clean the equipment.
- For the arrangement of trails a distances of 5 -10 m to the control area is advisable. Special attention is called if Penergetic objects or the test objects come in contact with water or metal. Water transfers information particularly quickly over a long distances.
- It takes several weeks until the effect of the Penergetic information will be disappeared from the test device.
- Tests should not be done on glass or metal tables that are connected to each other, this could lead to an information transfer.
- If there is an inclined ground, put the Penergetic test at the bottom so there is no contamination.

### Application

Penergetic provides a general spray / application scheme.

### How to set up and document a trial

- Define a responsible person who takes care about the test
- Take pictures from the beginning (make high quality pictures)
- Use previous documents of evaluations/analyses without Penergetic to make a clear comparison
- Use previous compost / barn analysis or make one before the trial
- Description of the initial situation
- Description of the objective / goal
- Create a data / control sheet where all the parameter (dose, application rate etc...) are written down