

Peony Care newsletter: March

Dear peony grower,

Watering

Paeonia is a sensitive crop. The crop is not strong due to the fast growth after sprouting. The plant repels its weakest flowers when the growth is fast while the weather is bleak. Especially during cold nights the frost will be blamed for this, but a lack of water is most likely the main reason. A sudden spell of warm weather during the stretching increases the risk too. Do not wait with watering until the soil is dry, but make it as pleasant for the plant as possible.

In the greenhouse and in the tunnel, the watering of the peonies is important for the final results. As said, the plant grows very fast. Therefore there is a big chance that the plant growth is more important the growth of the flower buds. The so-called choosing moment of the plant can be delayed by giving sufficient water. The plant will no longer repel its flower buds when they are large enough. Watering demands paying attention to the climate as well. Avoid big changes in temperature and humidity, open a window in time and provide an easy growing period. By only opening the windows when it is warm may cause Botrytis. Meanwhile, growing too dry in order to prevent Botrytis can result in dried up flower buds. So the irrigation should be optimal for a better development of the flower buds. If not, one problem will be solved at the expense of another one.

Botrytis

The first treatment against Botrytis has to take place when the plants start to emerge. The new shoots can be infected when they emerge from the soil due to the fact that the fungus lingers at the surface of the soil during the winter. Drenching the soil with Collis or Luna can reduce the number of infected plants - for example with a sensitive variety like Flame - by more than 90%. Peonies damaged by the wind and frost are also more sensitive. Varieties in which Botrytis was present after flowering in the previous season, need extra care. We would really like to emphasize the need to treat the plants timely and preventively. There is an advantage in doing so.

The dosage is maximal 4 liter per hectare and works best when as much as possible is drenched on the plants with lots of water (for sensitive plants 0,20 liter per plant). Using Collis regularly is not an option because of resistance. Loosening the top soil in the poly houses and in the greenhouses can reduce damage by Botrytis.

A peony is not very resistant to climate changes, because of its fast growth. Botrytis most likely appears around the damage due to this. Especially when peonies are not protected sufficiently during growth, the fungus will cause large problems. Extra spraying is most definitely needed during this critical period. Good and effective products are Teldor, Kenbyo, Flint and Switch.

p.s. Do not spray for two days after night frost.



Weed control

Weed control in peonies is more of a matter of discipline than a choice of means. In weed control the amount of organic content is almost only the most important factor. A heavy clay soil with almost little to no humus is light soil for weed control. The effect of a weed control product is being determined by a small line between effect and damage.

Most means for weed control work best in the first period after application. When there is not being sprayed on the right moment, then a higher dosage is needed. However, this also increases the change of damage to the plant. A new product is *AZ 500*, a soil herbicide that you can use before the emergence of the plants (perform a test first).

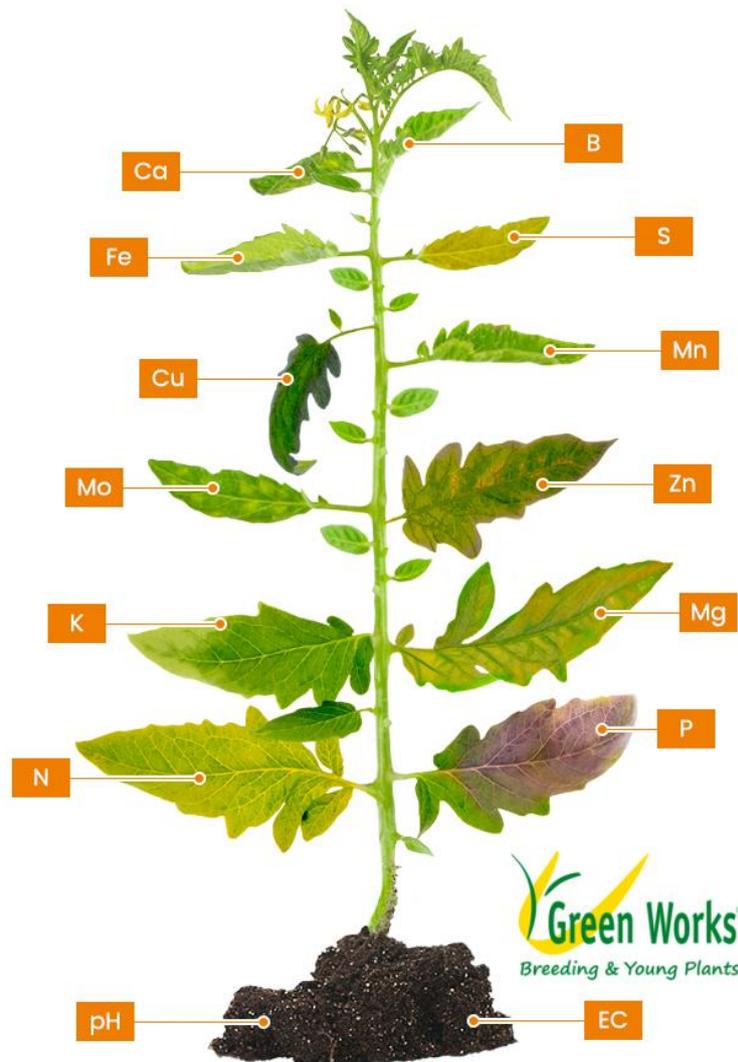
AZ 500 works well against many unwanted things, like weeds. But it also has its limitations. Contact us for more information about this product. It is time to spray with Goltix and Olie-H when the flower buds are visible. Goltix has the best results on a moist surface. Do not spray at sunny weather, but spray late in the afternoon. When there is night frost expected Goltix cannot be used because of the rapid degradation of the plant.

p.s. Leaf nematodes can infect the parcel by lifting on weeds (seeds).

Fertilizing

A peony needs a well-balanced fertilizing. The time in which a little bit of this and a little bit of that was enough, has passed. Peonies that have been standing the same spot for multiple years can deplete the soil and therefore they need fertilizers.

Until some years ago, only phosphate was known for a better root development. Now we know that the plants have a preferred order as it comes to the inclusion of elements. The order goes as follow: **boron, silicon, calcium, nitrogen, magnesium and phosphor.** The availability of these basic elements - and especially boron, silicon and calcium - is essential for a good start of the plants. If one of these elements is not available than the chain is broken and the growing process might start slower/with more problems.



Main elements

Nitrogen is the element that is absorbed the most and the easiest by the plant. A peony needs a lot of nitrogen during strong growth - like in the first weeks. Multiple problems can occur when there is a shortage of nitrogen. The older foliage might turn yellow to light green. The plants might flower too early, have less length growth and are more sensitive to fungal diseases. Too many nitrogen is not good for the Ca/Mg absorption.

Phosphate has a good effect on the formation of the main root system. This element takes care – in association with kali – of bigger and fuller flowers too. That is why we advise to give extra phosphate and kali before the blooming starts. A lack of phosphate will result in smaller foliage and less bright flowers. It is also possible that the foliage will colour red/purple (at low temperatures there can appear deficiency symptoms).

An excess of phosphate does not occur very often. But an excess can result in a shortage of magnesium.

Kali takes care of the firmness of the stems and the foliage. In association with phosphate it makes the flower buds bigger. When there is enough kali the plants can protect itself better against bacteria and fungi. With a lack of kali the edges of the leaves will turn yellow, starting with the older leaves at the bottom. The foliage turn smaller and the stems thinner. Too many kali causes salt damage and a bad plant growth.

Magnesium gives the plant a healthy and fresh green appearance. It also increases the strength of the cell walls and the firmness of the tissue. It is a building stone for various enzymes too. When there is a lack of magnesium the leaves turn yellow while the leaf veins will stay green. There is almost no excess possible. Deficiency symptoms can occur at lower temperatures.

Calcium is used by the plant for its firmness and to build-up cells. This element is very important for the water balance of the plant and is indispensable at high temperatures. The plant will evaporate a lot at high temperatures and it has to take in more water than usual. A shortage of calcium arises when the growth is too fast en the humidity too high. In this circumstances the plant cannot evaporate too little to not at all. If a plant cannot evaporate, it will also not take in any water or nutrition. When there is a lack of calcium the young foliage will die and the plant will be more sensitive to fungal diseases.

Trace elements do not get enough attention in cultivation. It are the vitamins and minerals for the plant. The trace elements will be absorbed less well when the pH level is higher than 6.5. Trace elements are: Fe = Iron, Mn = Manganese, B = Borium, Zn = Zinc, Cu = Copper and Mo = Molybdenum. All these elements have an important function. They are the building blocks of the plant. Trace elements take care of the water balance, cell division and metabolism of the plant. The trace elements are absorbed by the plant through its roots so it is important to have enough of them. There are almost no trace elements in the nutrition that we buy. It is important to give extra during every feeding.

The results of a shortage of a specific micro element are as follow:

Fe = iron: young leaves will turn light green, yellow or white between the nerves.
Absorption problems at low temperatures, too wet or dry soil and a high pH value.

Mn = manganese: older leaves will turn yellow between the nerves.
Absorption problems at low temperatures, too wet or dry soil and a high pH value.

B = boron: growing problems and malformation of the foliage.

Zn = zinc: growing problems and unwanted spots on the foliage.

Cu = copper: dying flower buds, young leaves will curl and turn yellow or grey.

Mo = molybdenum: multiple problems with younger and older leaves.



What are DCM organic fertilizers?

Organic fertilizers are composed of plant material and animal raw materials. All materials have a natural origin. Soil organisms – such as bacteria and fungi – are slowly breaking the fertilizer down. Nutrients inside the fertilizer (nitrogen, phosphorus and potassium for example) are released in this process. Through the use of multiple raw materials and gradual digestion, the nutrients are available to the plants over a longer period of time - about 100 days.

Benefits of DCM's organic fertilizers

Chemical fertilizers are quickly soluble salts that become available to the plant roots at once. When there is an excess of these nutrients, there is a chance that the plant cannot take in everything. As a result, a (large) part of these nutrients is lost due to leaching and the roots of the plant might be damaged.

In the case of DCM's organic fertilizers, the release of nutritional elements is associated with the needs of the plant. In warm and moist weather – when the plant grows quickly and therefore needs more nutrients – the fertilizer digests faster and as a result the nutrients become available earlier. Almost no nutrients are lost due to leaching and there is no risk of root damage. Organic fertilizers do not only have a longer duration time. They are more friendly to the environment and safe for the plant too. The organic fertilizers also have a positive effect on the soil life.

DCM fertilizers in peony cultivation

In peony cultivation, a number of organic fertilizers are used. A difference is made between indoor and outdoor cultivation. You will find an overview below.

Indoor cultivation peony

- Mix 2 (7-6-12 + 4MgO)
- Micro-mix: mixable trace elements (contains iron, manganese, copper, boron, zinc and molybdenum)
- Vivisol: spreadable grain, creates a rich and varied soil life
- Olega fer: fast-acting iron leaf nutrition

Outdoor cultivation

- Mix 5 (10-4-8 + 3MgO)
- Vivikali: slow-acting organic kali
- Vivifos: slow-acting organic phosphate (also available at high pH)
- Olega fer: fast-acting iron leaf nutrition

For a customized advice, please contact your advisor.

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The first shoots are coming out of the ground. The plant wants to get its sugar transport going again. Especially in this initial phase the crop needs boron, silicon and calcium. These three elements play a crucial role in the start of the growth.

- 1) Boron activates silicon
- 2) Silicon starts the absorption of elements, starting with calcium
- 3) Calcium takes care of strong cell walls and thus a resilient crop



Boron

Boron increases the silicon and calcium efficiency, is involved in cell wall strength and is important for root development. The starting dose is 20 liters per hectare of Humi-B (old name: Liquid Boron Humate). This is a pure humic with 2 percent buffered boron.

It is a ready-to-use solution for easy application. But boron is the most unstable trace element and it leaches easily in soils with a low humus content. This is because boron is negatively charged. When boron is coupled to a humic acid, the boron does not flush out.

Silicon

Silicon is important for the firmness of the cell walls, making diseases and insects less likely to affect the plant. Silicon is also important for a good flower setting. Silicon can be given via the soil through 20 liters per hectare of Dia-Life. This product contains a high concentration of silicon, but also boron and fulvic acid.

Calcium

Calcium is important for the firmness of the cell walls. As a result, the basis of a resilient crop is laid. Calcium can be given through the soil by spreading Bio-Gips or by means of 20 liters of Gyp-Life per hectare. This contains a high concentration of natural calcium sulfate in a mixture with fulvic acid.

Root & Shoot

In addition to the silicon, calcium and boron content, we recommend a starting dose of 10 liters of Root & Shoot per hectare. This mixture of nutrients, seaweed extract, vitamins, humus and fulvic stimulates root and shoot growth.

The starting dose of peony (inside and outside) :

20 liter per hectare	Humi-B	boron with humus
20 liter per hectare	Dia-Life	silicon with fulvic
20 liter per hectare	Gyp-Life	calcium with fulvic
10 liter per hectare	Root & Shoot	nutrients, seaweed extract, vitamins

We can give you an individual advice by doing a soil analysis.

More information:

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When planting peonies (autumn 2018): the benefits of the investing in 3-5 eyes compared to 2-3 eyes:

Number of stems/flowers per plant (2-3 or 3-5 eyes):

Variety	Year	Amount of stems	
		2-3 eyes	3-5 eyes
Sarah Bernhardt	planting in autumn:	2018	
	spring	2019	0
	spring	2020	0
	spring	2021	4
	spring	2022	6
	spring	2023	7
	spring	2024	7
	spring	2025	8
			32

Have a look at [our website](#) or contact us for more information:

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Green Works supplies young planting material for the professional cultivation of pot plants and (summer) cut flowers. Green Works is also a large grower of peonies for the successful cultivation and trade in the Netherlands and abroad. We supply within the Netherlands and globally to professional growers and (export) traders. With support in cultivation, promotion and sales, Green Works offers a total package to put an unique and healthy product on the market: <http://www.green-works.nl/en>

Green Works can never be held liable for any cultural information given and only to be used as a guideline. The grower is at all times responsible for his own action and to read the label of the chemicals being used.