

Peony Care newsletter: February

Dear peony grower,

Due to the winter weather and the associated cold hours, the hybrid varieties are emerging early this year. Therefore, please take this into account for your weed and fungicide schedules.

Phytophthora

Phytophthora is an infection which takes place through injuries under humid circumstances. The fungus can survive in plant tissue and in the soil for years. The first infestation can be recognized through black and weak leaves in the crop. When there is an infection by Phytophthora in the spring, brown to gray black spots will arise on the stem parts. In that case the branches will come up like some sort of black brackets and they will not grow further than 10 centimeters. After infection it is almost impossible to remove. Places of infection will most of the time feel spongy and soft, where the marrow will be dark brown and wet rot. Kansas and Duchesse are examples of species who are sensitive to Phytophthora. The elements Manganese and Zinc offer resistance against Phytophthora. To prevent this, from the moment the flower rises till the mulching, you have to spray (once per 2 weeks) with, for example, copper, Pergado V, Paraat, Axidor (works systematically), or Ranman Top.

It's easy to confuse Phytophthora with damage from night frost. In both cases the head of the flower dies, a black brownish color arises, the flower dries out and the head will start to bend down. With damage from night frost, on the brink of diseased and healthy tissue, a cavity in the stem arises. The difference between Phytophthora and night frost can therefore easily be determined. With a serious infection, leaf nematodes can also be the cause of dead flower heads, with the difference that the head doesn't bend. In that case, small, half-formed leaves can be seen. To prevent the unnecessary use of expensive pesticides, it is wise to test suspicious plants on the presence of Phytophthora.

Measures:

- Use healthy starting material
- Care for a good soil structure
- Avoid a soil that is too wet and ensure adequate drainage
- Avoid a high salinity of the soil
- While spraying against Botrytis, occasionally add a Phytophthora agent
- Early pruning increases the risk of stress, making the plant more susceptible to Phytophthora.
- Consider planting a cover crop in the autumn to improve soil structure.
- Phytophthora can be introduced via surface water, but not through spring water.
- High nitrogen levels make the plant more sensitive/vulnerable.
- Increase plant resistance by, for example, co-planting with Trichoderma.



Phytophthora in a peony



Phytophthora in a peony

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 or 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 than 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.

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 when it comes to 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 at the right moment, then a higher dosage is needed. However, this also increases the change of damage to the plant. AZ 500 is a soil herbicide that you can use before the emergence of the plants. This product works well against many unwanted things, like composites such as chamomile, groundsel, crucifers such as *capsella bursa pastoris* and *cardamine hirsuta*. But also poppy, purple dead-nettle and many other broadleaf weeds. But it also has its limitations. AZ 500 is not effective

against cleavers, pelargonium and grasses and perennial weeds that emerge from rhizomes. It is time to spray with Corzal SE and Goltix when the flower buds are visible. On a moist surface, Goltix has the best results. 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. The new product Oblix poses as an effective solution against cleavers.

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

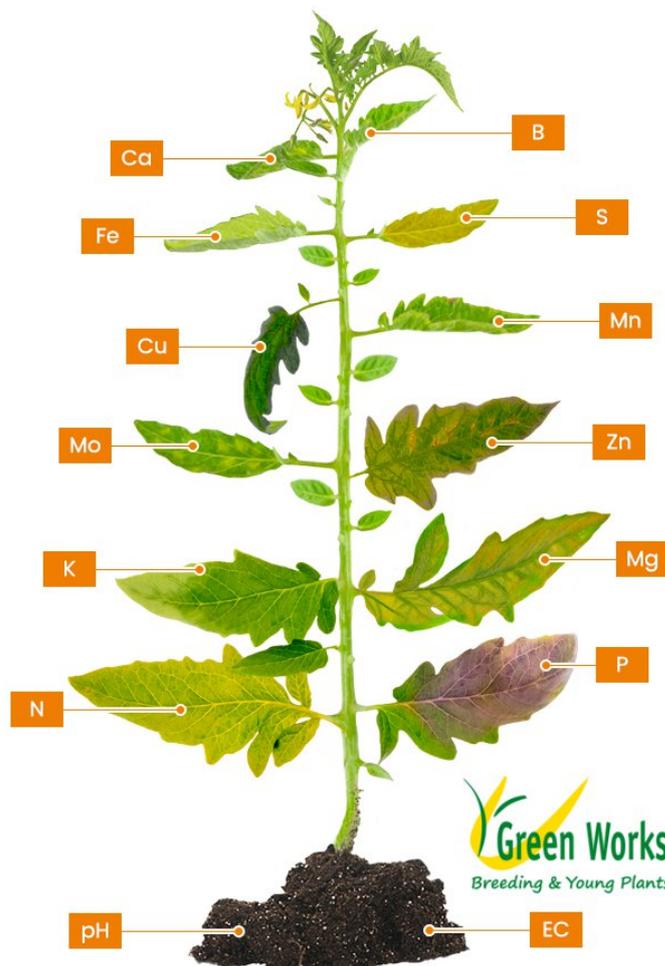
Fertilization

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

Start of the cultivation

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 follows: sulfur, 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

The element **nitrogen** is most easily absorbed by the plant. Lots of nitrogen is needed during strong growth, like in the first weeks at the vegetative stage (length growth). There are two forms of nitrogen in your soil: ammonium nitrogen and nitrate nitrogen. Equal amounts of these two forms is ideally (a 1:1 ratio). A lack of nitrogen causes the plant to get light green or yellow foliage, flowering too early, less length growth and vulnerability to fungus diseases and insects. An excess inhibits Ca/Mg and boron absorption.

Phosphate works favorable in forming the main root system. This element improves - together with potassium - the forming of the flowers several weeks before the blooming. It is advised to apply extra phosphate and potassium before flowering time. A lack of phosphate results in smaller leaves, less colorful flowers, possible later flowering and red/purple coloring of the leaves (deficiency symptoms may occur at low temperatures). Excess symptoms basically do not occur, because phosphate easily binds to the soil particles. But a too large application of phosphate will cause that the plant cannot take up magnesium and this results in a lack of magnesium.

Potassium ensures firm foliage and stems. Together with phosphate, this element is used for larger and fuller flowers at the flowering time. When a plant has enough potassium, it can protect itself better against fungus and bacteria. A lack of potassium causes yellow leaf edges. This starts with the older leaves at the bottom. The foliage will also get smaller and the stems thinner. Too much potassium could cause salt damage and a poor plant growth.

Magnesium gives the plant its fresh, healthy green appearance. It also has a function for the cells and the firmness of the tissue. It is a building stone for some enzymes. When there is a shortage of magnesium you will see the leaves turn yellow, while the leaf nerves stay green. This element is limited available during drought, a cold spring, a low pH value and a high lime content. Excessive growth does not occur.

Calcium is used by the plant for its firmness and to build up cells. Calcium is essential for the water regulation of the plant and is indispensable at higher temperatures. The plant will evaporate a lot at higher temperatures and needs to take in more water. A shortage of calcium occurs when the growth is too fast and the humidity is too high, causing less evaporation in the plant. When the plant cannot evaporate it cannot absorb any water with plant food. With a deficiency, young leaves will wither and the plant will be more susceptible for fungus diseases. Calcium absorption is limited with a phosphate and lime rich soil.

Silicon is the neglected element when it comes to resilience. But it comes with an impressive array of other benefits. Including the fact that silicon helps with the absorption of calcium and it strengthens the cell wall to resist insects and diseases. And a more robust cell wall means stronger stems. Plants often have a silicon deficiency

when they start to hang at the first signs of solar stress. Silicon-enhanced plants are more resistant to heat, cold, drought and have natural resistance to diseases and insects.

When it comes to the cultivation, there is little attention for **trace elements**. These are the vitamins and minerals for the plant. An uptake inhibition occurs when the pH value is greater than 6,5. Trace elements are: Fe = iron, Mn = manganese, B = boron, Zn = zinc, Cu = copper and Mo = molybdenum (high numbers often mean a high pH value). All these elements have an important function. They are the building stones of the plant. Trace elements are also needed for the water regulation, dividing of cells and metabolism of the plant. The trace elements are absorbed by the plant through its roots. Therefore it is important to grow strong roots. The plant food that is sold in the trade contains little to no trace elements. Therefore it is important to apply those during feeding.

The results of a shortage of a specific trace element are as follows:

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: improves the number of flowers. This element is required at the start of the cultivation, together with calcium and silicon. Deficiency symptoms are growing problems of the growth point and malformation of the foliage.

Zn = zinc: growing problems and chlorosis spots on the young leaf.

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

Mo = molybdenum: almost always too low on the SoilBalanceAnalysis. It is important for the conversion of nitrogen gas in the air to ammonium nitrogen in the soil by enzymes. Yellow discoloration may be a deficiency problem in old leaves if nitrogen can't be properly converted. Deficiency symptoms on young leaves can be different things: malformation of the foliage and yellowing of the leaves.

Added value of suitable fertilization in peony cultivation

The cultivation of peonies is characterized in two ways: it is a perennial crop in which the same plant is harvested for several years and the annual growth process goes through two phases: a period before cutting and a period after cutting. An additional third characteristic is that appropriate customized fertilization pays for itself. Both in vitality and in the yields that can be achieved per square meter.

Period Before Harvest

The period before harvest begins around February. The rhizome becomes active and starts sprouting in response to the rising soil temperature. During this period, the first

fertilization usually takes place: it is important to achieve sufficient length growth and a deep green leaf color, so all elements must be available in the right amounts.

Nitrogen is particularly important for length growth; however, it is also crucial to consider the form of nitrogen being supplied. The period from February to harvest lasts several weeks, so it is essential to provide the right nitrogen forms and not just in mineral form. For a deep green leaf color, multiple elements are important, including magnesium and various trace elements. However, nitrogen availability also plays a key role in this.

DCM offers various fertilizers tailored to the needs of peonies during this growth stage. These are generally organic-mineral fertilizers composed of multiple organic raw materials. The mineral component ensures a quick start, while the organic materials provide long-lasting effects and basic fertilization up to the harvest. This way, the peonies achieve the desired length growth while maintaining a beautiful color. Commonly used fertilizers include DCM MIX-5 (NPK 10-4-8 + 3 MgO) and DCM START (NPK 18-3-3 + 2 MgO).

For trace elements, DCM MICRO-MIX is often used as an organically bound trace element fertilizer that releases nutrients steadily over time. This provides the peony with essential trace elements such as iron, boron, and manganese, both before and after harvest. Depending on the nutrient retention capacity of your field, additional adjustments can be made with a fast-acting mineral fertilizer.

Period After Harvest

The period after harvest is just as important as the period before. After harvest, the peony starts rebuilding its energy reserves to prepare for the next year's harvest. This is a period where the assimilation process is central something characteristic of perennial crops.

Fertilization is an essential aspect of this growth stage. The plant has undergone stress from losing several stems. Therefore, after harvest, the focus is on crop recovery and sugar production. Key elements during this stage include potassium, magnesium, calcium, and various trace elements.

A suitable fertilizer is also crucial after harvest. Typically, these fertilizers have a high potassium formulation with lower nitrogen content, as nitrogen is no longer needed for length growth but is still important for maintaining color and vitality. Commonly used fertilizers include DCM MIX-2 (NPK 7-6-12 + 4 MgO), DCM MIX-6 (NPK 6-3-18 + 3 MgO), or DCM VIVIKALI (NPK 2-0-20).

Added Value of Proper Fertilization

Providing the right fertilization ensures better growth and development. From various other perennial crops, we know that sugar levels in the rhizome during winter indicate the plant's energy level for the following year. Numerous trials and demonstrations have shown that mineral-organic fertilization leads to higher sugar levels in the plant.

It has become clear in recent years that sugar content is also an indicator of the productivity of a crop like peony. Practical measurements among various peony growers have shown that different fertilization strategies can impact production. With optimized

fertilization using mineral-organic fertilizers, it is often possible to harvest several more stems per square meter.

If you, as a grower, would like to discuss the possibilities of adopting a different and improved strategy, please send an email with a request for contact to info@dcm-info.nl.

Leatherjackets (Crane Fly Larvae)

Adult crane flies feed only on a small amount of nectar. However, their larvae, known as leatherjackets, are much more voracious. They are relatively large, soft, and thick and feed on various plants, including peony stems just below the soil surface.

Life Cycle

The crane fly undergoes six developmental stages: an egg stage, four larval stages, and an adult stage. The adults live only for a few days. Some species have one generation per year, while others have multiple generations, meaning larvae can be present all year round, continuously causing damage.

Damage Symptoms

During the day, leatherjackets remain in the soil. At night, they come to the surface and feed on the stem base and lower green parts of the plant. They also pull the plant slightly into the ground. Stems with a damaged base will wilt.

Control Measures

Biological control is possible using parasitic nematodes such as Nemasys H, C, or F.

Botrytis

The first treatment against Botrytis takes place during emergence. Because the fungus overwinters through spores at the soil-air interface, the new shoots become infected during emergence. Watering with Collis can reduce the number of toppled plants by more than 90% in a sensitive variety, such as Flame. We therefore want to emphasize the importance of timely and preventive treatment of the crops, as this can provide a significant benefit.

Regular use of Collis is not recommended due to resistance.

Loosening the topsoil in tunnels and greenhouses can also significantly reduce damage caused by toppled plants.

Due to its rapid growth, peonies are not very resilient to climate fluctuations. Around the resulting damage, Botrytis almost certainly develops. Especially when peonies are not protected during growth, the fungus continues to cause major problems. Additional sprays are therefore definitely needed during this critical period. Effective and recommended products include Teldor, Kenbyo, Flint, Luna, and Switch.

After a night frost, do not spray for 2 days due to weakened plants.



Fungicide List

	Active ingredient	Operating mode
Pitcher	folpet 460 g/l en fludioxonil 60 g/l	Botrytis, Fusarium, leaf spot, Rhizoctonia and Phoma
Collis	kresoxim-methyl (100 g/l) + boscalid (200 g/l)	powdery mildew, botrytis, rust, Botrytis and fusarium
Luna Privilege	fluopyram 500g/l	powdery mildew species, Sclerotinia and Botrytis
Alibi Flora	azoxystrobin en difenoconazool	rust, phoma, leaf spot, Rhizoctonia
Ranman Top	cyazofamide (160 g/l)	Botrytis, Xanthomonas and Phytophthora
Amistar	125 Difenconazool + 200 Azoxystrobin	Rhizoctonia
Switch	Fludioxonil en Cyprodinil	Botrytis, Rhizoctonia and Colletotrichum
Flint	trifloxystrobin 50%	leaf spot, botrytis, powdery mildew, purple spot
Ortiva	Azoxystrobin 250 g/l	powdery mildew, rust and botrytis
Teldor	fenhexamid	Botrytis
Luna Sentation	fluopyram en trifloxystrobine (250 + 250 g/l)	powdery mildew, botrytis, Colletotrichum and Sclerotinia

In the link below you will find our extensive and updated peony assortment of 2026 - 2027:

[Peony Catalog 2026 - 2027](#)

Green Works also supplies other summer flower starting material, like: Ranunculus Butterfly™, Ranunculus Romance™

For more information, please consult [our website](#) or contact:

Ed Kleijbeuker tel. 0031 (0)6 24 94 64 05 | ed@green-works.nl
 Daan Kneppers tel. 0031 (0)6 51 82 47 12 | daan@green-works.nl
 Beau Kneppers tel. 0031 (0)6 12 57 60 45 | beau@green-works.nl

Also, follow Green Works on [Facebook](#), [Instagram](#) and [LinkedIn](#) for more relevant information about our Peonies, amongst other things.



Green Works is the grower specialized in young planting material for Peonies, Ranunculus, special pot plants and summer cut flowers. Green Works also is a large grower of peonies for the successful cultivation for cut flower 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: 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.
