

Peony Care newsletter: January - February

Dear peony grower,

2024 was another wet year, with a nationwide total of 1,055 mm of rainfall. November and December also saw a lot of precipitation, which has affected almost all nutrients in the soil. Regularly taking soil samples at fixed intervals will provide you better understanding of the plant's needs.

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. With chemical control, the Phytophthora spore easily adapts and mutates, so it is important to alternate chemical agents.

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.
- Ensure good soil structure.
- Avoid excessively wet soil and provide adequate drainage (use a subsoiler in the paths without damaging the roots).
- Avoid excessively high soil salinity.
- Regularly add a Phytophthora treatment when spraying against Botrytis.
- Early mowing increases the risk of stress, making the plant more susceptible to Phytophthora.
- Consider a green manure crop in autumn to improve soil structure.
- Phytophthora can spread through surface water but not through groundwater.
- High nitrogen levels make the plant more sensitive/vulnerable.
- Increase plant resilience by, planting Trichoderma along with the crop.

Weed control

Weed control in peonies does not go without problems. Especially now – the period **before** the growth of the eyes – it is best to spray Kerb in combination with Stomp and add a binder to it.

Kerb has a strong effect at low temperatures (lower than 12°C, but best around 5°C) against seed weeds – like stinging nettle. **Do not ever spray in the rain.** The rain will let the herbicide soak in the soil, which causes damage. **Never** spray Stomp when the new shoots appear above the ground.

The herbicides Wing P and Dual Gold may cause damage when there is illuviation. The result is a limited growth.

The long-lasting soil herbicides against germinating weeds in peony cultivation are Devrinol 45 SC and AZ 500. Spray before emergence.

Organic matter is of great importance for soil fertility. It is capable of retaining moisture, it is important for the workability and it can bind nutrients and also deliver them. You can make your way through various imbalances in minerals and deficiencies in the soil, simply because humus compensates and counteracts most problems. The organic matter content decreases – among other things – because it serves as food for the soil life. When this happens, nitrogen, sulfur and other nutrients are released and can be absorbed by the plant.

The organic matter content can drop quickly, but not rise quickly. It is therefore important to ensure that this content remains the same. To keep the organic matter content at the same level, you can supply this via animal manure and compost. Use this knowledge for a healthy soil-life and organic matter content, and use other fertilizers if necessary.

The soil life has a big impact on the plant growth. The soil life must release the nutrients from the organic manure that are indispensable for the plant. But the soil life has some other functions too:

- Degradation of plant remains, manure, dead soil organisms and releasing nutrients
- Construction of organic matter that is only slowly degraded
- Taking care of a good soil structure
- Limiting excessive numbers of pathogenic organisms

Fertilization

Top quality peonies require good fertilizers. The time in which some of this or that was enough, is over. Peonies that have been growing for a couple of years can exhaust the soil and surely need fertilizers. It is all about balance. As with most things in life, this is also the case for the soil.

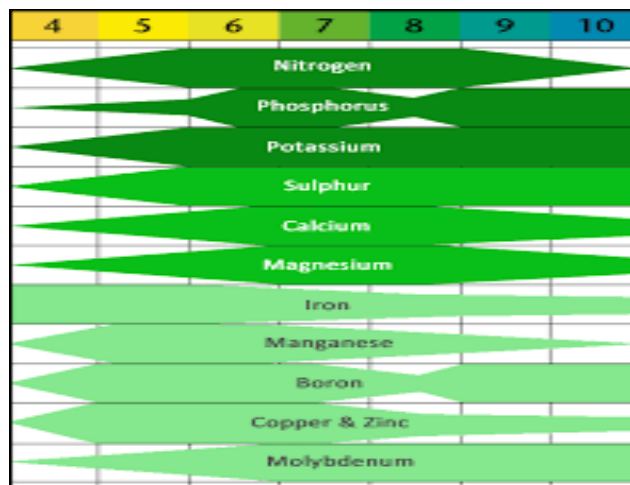
Start of the cultivation:

Until a few years ago, only phosphate was known to make the roots better. But the plants have preferences as it comes to the order of the fertilizers. In the first stage of the growth they need sulfur followed in order by boron, silicon, calcium, nitrogen, magnesium and last but not least phosphorus. The availability of these elements - especially boron, silicon and calcium - are essential for a good start of the plants. The cultivation will start slower when these elements are not (enough) available. Also this 'train' of absorption will be interrupted.

Make sure that there is sufficient water available for the plant to absorb the fertilizers. An active soil life is therefore important. Moist soil and a correct organic matter content are very important to enhance the absorption of the above-mentioned fertilizers.

Soil pH

A pH value is a measure of the degree of acidity or alkalinity of the soil. Soil pH has a great influence on the absorption of nutrients. If the soil has a pH value of 6,4, then most minerals are best available for the plant. This value is therefore considered to be the ideal soil pH.



Tip: use foliar nutrition when the pH value is high.

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 uptake.

Phosphate works favorable in forming the main root system. This element improves - together with potassium - the forming of the flowers several weeks before 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 nutrition. With a deficiency, young leaves will wither and the plant will be more susceptible to fungal infestation. Calcium absorption is limited with a phosphate rich and calcareous 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 inhibition in the absorption 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: helps with the absorption of silicon. 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.

Liebig's law of the minimum, often simply called Liebig's law or the law of the minimum, says this: **growth or yield of the plant is not dictated by total resources available, but by the scarcest resource available.**

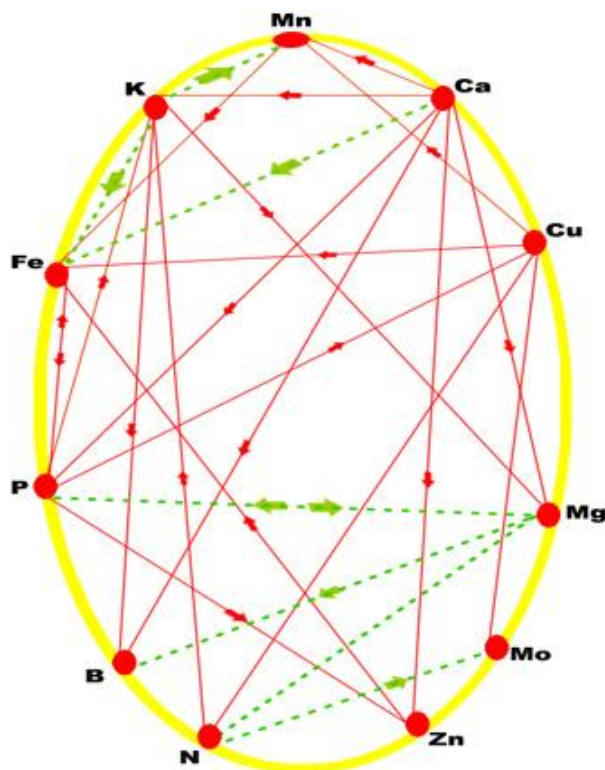


In the winter, supplementation with compost is advisable. Especially for the parcels with more mature peonies. But be advised, compost always contains a lot of potassium and that can cause an imbalance. Therefore always calculate a compost mixture using the SoilBalanceAnalysis. Defects of elements can be added to the mixture and thus it is prevented that elements are overdosed.

All nutrients must be given in the right proportion to each other. Otherwise there will be a limited factor of antagonism, which also means repression. The plant food element that is more present represses the plant food element that is less present and is therefore no longer absorbed by the plant. An excess of potassium for example has an inhibitory effect on the absorption of calcium. Too much calcium might cause even larger problems, because calcium represses almost all nutrients besides nitrogen. Deficiency and excess symptoms usually arise because of these repressions.

Antagonism (red line): an element represses the absorption of another element.

Synergism (green line): an element promotes the absorption of another element.



Watering

In the greenhouse and in the tunnel, the water supply is decisive for the result. Moisture leads cold into the ground. Moist soil and a proper organic matter content are important for the uptake of the fertilizers mentioned above. Drought during this period will damage flower production for the coming season.

Slugs: the sneaky killers in your peonies!

Slugs can cause a lot of damage in the winter months and early in the spring. Under glass, but also in your peony fields. Therefore be alert for gluttonous slugs and prevent damage to your upcoming peony cultivation.

Slugs (without a shell) and snails (with a shell) are mollusks. Slugs without a shell mostly appear under glass and they can cause much damage in many varieties. They are not very particular in their choice of food. Snails prefer the young leaves, but also the sprouts of your peonies.

Both species are active at night and they retreat during the day. Therefore they are not easy to be found on damaged plants. When a plant is damaged, it can be susceptible to all kinds of fungal diseases. Which can cost flower buds.

Also check for mice!

Botrytis

The first treatment against Botrytis has to take place when the plants start to emerge. The fungus lingers during the winter at the surface of the soil. Therefore the new shoots will be infected when they emerge from the soil.

Drenching the soil with Collis can reduce the number of infected plants – for example with a sensitive variety like Flame – by more than 90 percent. We would therefore like to emphasize the importance of treating the plants timely and preventively. There is an advantage in doing so.

The dosage of Collis is a maximum of 1,5 liter per hectare (3 applications possible). It works best when it is drenched on the plant as much as possible in combination with a lot of water (for sensitive plants 0,20 liter per plant). Due to resistance, it is not an option to use Collis regularly. Loosening the top layer of the soil in the tunnels and greenhouses can significantly reduce damage by infected 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 Difenoconazool + 200 Azaxystrobin	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 trifloxystrobin (250 + 250 g/l	powdery mildew, botrytis, Colletotrichum and Sclerotinia

In the link below you will find our extensive and updated peony assortment of 2025 – 2026:
[Peony Catalog 2025-2026](#)

Green Works also supplies other summer flower starting material, like: Ranunculus Butterfly™, Ranunculus Romance™, Scilla peruviana and Asclepias Beatrix®.

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

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Also, follow Green Works on [Facebook](#), [Instagram](#) and [LinkedIn](#) for more relevant information about Helleborus or. Queens™ 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.
