

Mould infections in Buxus are now occurring worldwide. In the early 90s, the fungus started its advance, first in the UK and later in Europe, followed by the USA and Canada in 2011

Two different moulds occur : *Cylindrocladium buxicola* (new name *Calonectria pseudonaviculata*) and *Volutella buxi*. Both moulds cause leaves and branches dying. The disease usually starts with *Calonectria* (2 types) and may be followed by a secondary infection of *Volutella*. Therefore both moulds need to be fought.

You can find a detailed description of these diseases below.

- Description of ***Calonectria pseudonaviculata* (*Cylindrocladium buxicola*)** :
The infection starts with black spots on the leaves. After a few days all the affected leaves start falling off and black stripes appear on the young twigs.



- Description of ***Volutella buxi*** :
The infection starts with the leaves turning brown, which then wither and temporarily stick to the plant. At the bottom of the leaves pale pink fungal spores appear.



These diseases can be controlled when treated correctly. Taking timely measures can prevent a lot. A preventive approach is preferable in gardens with a lot of Buxus. However, if no treatment is performed in case of infestation, the damage can be huge. This scenario usually begins with a few small spots, which turn into large infected areas the second year. The biggest harm will be done in the summer and fall, especially in humid conditions and higher temperatures. Extra caution, especially after heavy rain showers, is certainly required.

Infected plants will recover completely after a proper treatment.

Treatment

- Multiple treatments are necessary to control the disease. A good variation of the used fungicides is the best way to prevent resistance. Due to the limited number of approved substances, control is not that simple. Many products are also not available for private gardeners.
- During dry periods, you can extend the period a little because there is less chance for diseases. Extra vigilance is required during wet periods, even until the end of October. Normally, 3 treatments a year are sufficient, if executed at the right time. For gardens with a lot of Buxus or gardens that already have been infected 4 à 5 treatments per year are recommended. It is important to stop the disease, because with every new outbreak many fungal spores are formed so that the cycle starts again.

- The following professional schedule is currently showing good results (2018)

| Time | Product | Active substance | Dose/10 l water | Remarks |
|-----------|------------|---------------------------|-----------------|---------|
| May | Topsin M | Thiofanaat-methyl | 11 ml | |
| June | Ortiva Top | Azoxystrobin+difeconazool | 7.5 ml | |
| July | Topsin M | Thiofanaat-methyl | 11 ml | |
| August | Eminent | Tetraconazool | 7.5 ml | |
| September | Topsin M | Thiofanaat-methyl | 20 ml | |

- Following active ingredients also are effective: chloorthalonil, difenoconazool, tebuconazool, kresoxim-methyl etc. Products based on copper, which are allowed in bio farming, give a preventive effect on a moderate level.
The phyto regulation in Europe regularly change. Not all products are allowed in every country. Please always check the correct approval on phytoweb for Belgium.

Prevention

By using a number of correct measures the disease can significantly be diminished.

- A good hygiene is advised but this is no guarantee that the disease will not occur. Avoid contact between infected and healthy plants. Disinfecting hedge shears is not very effective. A good treatment with fungicides after clipping is a better way to avoid infection.
- In gardens with automatic irrigation it is better, in periods of drought, to give a lot of water once a week than spray every day. This way the plants can dry better and the mould will have less chance. Also the use of drop irrigation is also recommended.
- Judicious fertilizing can prevent much harm. Plants that grow calmly prove less susceptible to disease. The use of coated fertilizers is therefore preferred. Overfertilizing must definitely be avoided.
- The way we use Buxus also highly affects the preventing of these diseases. Tight solids, trimmed shapes and clouds are much more susceptible than naturally grown bushes. Some extra care in such gardens is certainly advised.
- Variety of sorts can also prevent a lot of problems. Avoiding susceptible species must be considered. Some sorts of Buxus appear to be non- or little susceptible and can offer a good solution in many cases.

Conclusion

it is a fact that we are increasingly being confronted with long humid periods in the growth months. These circumstances in particular stimulate moulds on plants. Also Buxus is affected by this. Because of the prejudice that nothing could happen to Buxus, these mould infections were not or little attended to. Because of the poor knowledge about these moulds, wrong advice was often given.

I believe that an adequate follow-up and treatment are the only solution to keep this epidemic under control.

At this moment the use of less susceptible Buxus cultivars is recommended, especially if you do not wish to follow the treatment schedule. In the long term more resistant cultivars will offer the most sustainable solution. Our breeding program is running at full speed and the first resistant hybrids are expected by mid-2019, but will be available exclusively only, in the first few years.

Buxus remains one of the most grateful plants for the garden in spite of these new diseases, but it has now become a plant with instructions for use, just like roses, vegetables and fruit. Perhaps Buxus will no longer be suited for every garden owner and/or gardener

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