



DAMAGES AND PEST CONTROL



LIMBOROUGH HUB GARDENING WORKSHOPS 2023

Climate change often forces us to reconsider the variety of crops we grow and changes the techniques of how we protect our garden.

Damage can be caused by weather or pests. The latter can be divided further into three groups: **caused by animals, bacteria or fungi.** Pests and damages are best recognized by their effects on plants.



NOTES

COMMON CAUSES - WEATHER DAMAGES

Damages caused by weather events such as a heatwave, storm, snow or frost are quite common, but sometimes worse harm is by done by drought or high level of groundwater. New plants often are more exposed to damages than established plants.

DRAUGHT AND DRY SPELL

In case of drought roots cannot gather sufficient water to sustain the foliage. Leaves start to wilt first, followed by leaf and bud loss, and ultimately die-back of shoots or whole plants. Parts of the plants furthest from the roots are usually affected first and most severely.



Drought also can be recognised by **Bud and leaf drop:** Leaf or bud drop is common when plants are too dry, either from lack of moisture in the soil or air. Frost or wind damage between the period of bud formation and bloom also can .Increasing humidity levels can help.



Scorched leaves: Indicate that water from the leaves is being lost faster than it's being replaced. This is usually the case with plants that are in the sun all day or in exposed locations. Brown spots after a hot spell can also indicate damage from high temperatures



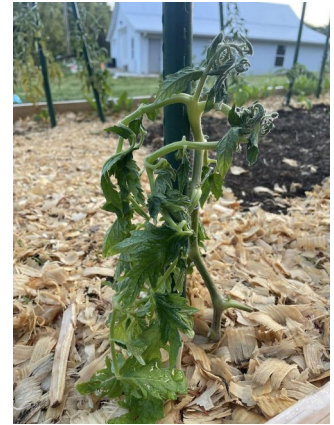
Die-back of shoots or whole plants: Browning of shoots suggests that moisture can't reach the affected leaves. Waterlogging and drought may be involved, but pests and fungal root diseases are also often responsible

SUN AND HIGH TEMPERATURES



excessive sunshine and heat can lead to discolouration and burned patches on leaves, typically on the sunny side and/or the higher part of plants (Fun Fact: Hairy leaves (tomato, potato) may be damaged more than flat ones as the water droplet sits over the leaf and the light from these suspended droplet is focussed on the leaf.)

Sun exposure also can be recognised by **creased leaves** - this happens when temperatures and soil moisture fluctuate or the plant is exposed to heat for a longer period of time.

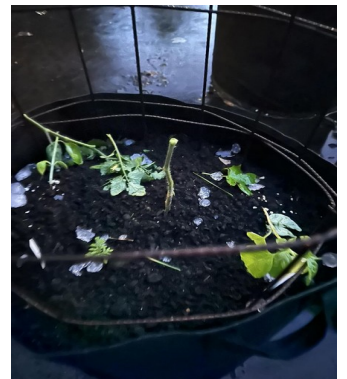


FLOODING - Soil filled with water contains no or too little available oxygen for plant roots. In winter when plants are dormant they can survive longer periods of floods but in summer when their oxygen demand is high, even short periods of a few days can be fatal.

HEAVY RAIN - Tends to **affect the top of plants** with rain damage breaking fragile shoots and flowers.

HAIL - Causes **fractures and surface damage**, and occasionally weakness or fruit loss. Hail cause small scars on young leaves and fruits that become very perceptible as plants grow. Hail damage primarily affects the top of the plants.

HIGH WINDS - Cause **Physical damage** to the upper and windward sides of plants. In severe cases plants can be uprooted. Windy weather also dries out leaves leading to browning, scorching and loss of buds, flowers and leaves. Leaning, tearing, breakage or abrasion is also normally due to wind exposure but some cases to mechanical damage caused by bigger animals



FROST - Also tends to affect the top of plants where the freezing is most intense. Lower leaves and areas inside the leaf canopy are less exposed to frost.

SNOW - As well as freezing damage, mechanical damage is caused by the weight of snow breaking branches.

CAUSES - COMMON PLANT DISEASES

BLACK SPOT OR LEAF SPOT

Black Spot or other Leaf spots Black spot is one of the most common diseases found on roses, but it can also occur on other ornamental and garden plants. This occurs during warm, wet conditions. This **fungal disease** causes black, round spots that form on the upper sides of leaves. Lower leaves are usually infected first. Severe infestations cause infected leaves to turn yellow and fall off the plant. Black spot is a problem during extended periods of wet weather or when leaves are wet for 6 hours or more. Black spot spores overwinter in the fallen leaves



Tips for Controlling Black Spots on Leaves

- Plant in well-draining soil.
- The fungus spores overwinter in plant debris. Remove dead leaves and infected canes from around the plants and do not add to the compost pile.
- Disinfect your pruners with a household disinfectant after every use. Ethanol or isopropyl alcohol can be used straight out of the bottle.
- Because water (not wind) spreads the fungal spores, avoid applying water on the leaves. When you water, apply water directly to the roots. Use a soaker hose to water plants prone to the disease.

POWDERY MILDEW

Powdery mildew is a **fungal disease** that is an easy one to identify. Infected plants have a white powdery substance that is most visible on upper leaf surfaces, but it can appear anywhere on the plant including stems, flower buds, and even the fruit of the plant. This fungus thrives during low soil moisture conditions combined with high humidity levels on the upper parts of the plant surface. It tends to affect plants kept in shady areas more than those in direct sun.



Tips for Controlling Powdery Mildew

- Inspect plants that you buy from a greenhouse before purchasing for mildew (and insects).
- Wiping off the leaves is not an effective powdery mildew treatment as it will return within days of cleaning.
- Because spores overwinter in debris all infected debris should be removed. Trim and remove infected plant parts.
- Do not till the debris into the soil or use in the compost pile.
- Space plants far enough apart to increase air circulation and reduce humidity.

BLIGHT

Plant blight is a common disease that affects plant belonging to the tomato – potato family. Blight is a **fungal disease** that spreads through spores that are windborne. For this reason, spores can cover large areas and rapidly spread the infection. Blight can only spread under warm humid conditions, especially with two consecutive days of temps above 50°F, and humidity above 90% for eleven hours or more. No cure exists. Prevention is the only option.



Tips for Controlling blight

- If growing potatoes, grow early varieties because blight occurs during mid-summer and you can harvest your crop before the blight.
- Destroy any blight-infected plant parts. Keep the area clean of fallen debris from your diseased plants and discard in the trash. Do not add to your compost pile.

CANCER

Canker is often identified by an open wound that has been infected by fungal or bacterial pathogens and occurs primarily on woody landscape plants. Cankers are most common on stressed plants that have been weakened by cold, insects, drought conditions, nutritional imbalances or root rot. Rodents can also spread the pathogens.



Tips for Controlling Canker in Plants






- Remove diseased parts in dry weather.
- Grow resistant varieties whenever possible.
- Avoid overwatering and overcrowding; avoid mechanical wounds such as damage from lawn mowers.
- Keep plants healthy by planting in healthy soils and maintaining nutritional requirements.

General tips to Control Plant Fungus and Diseases

1. Build a well-drained soil with plenty of organic matter prior to planting.
2. Raise the beds if necessary and fill the beds with a commercial potting mix that drains well.
3. Soils that hold too much water can cause rotting.
4. Hand water at the root zone or use a soaker hose.
5. Fertilize as necessary to keep plants in peak condition.
6. Choose resistant varieties whenever possible.
7. Remove any infected debris to keep the disease from spreading. Remove and place in the trash (not in the compost bin) severely infected plants.
8. Water during early morning hours so the plants can dry out and avoid getting water on the leaves.
9. Disinfect pruners after cutting diseased plant parts.

CAUSES - PEST DAMAGES AND PEST CONTROL

Pest damages can be caused by animals (birds, vermin like rodents or insects) or bacteria and fungi.

Cause	Damage	Solution
Birds, Squirrels, Foxes 	They might eat the crops too but the bigger damage they cause is usually that they dig holes or prey on worms while destroying vegetables	<ul style="list-style-type: none"> • Hoops and nettings • Scarecrow
Slugs and snails. 	damage new shoots and plants, especially salad crops. Slugs damage the plants in the early growing cycle.	One of the best methods is to collect them by hand, preferably in the evening or early morning when it's not/yet that hot Slugs don't like moving over <ul style="list-style-type: none"> • sand • gravel • egg shells • coffee grounds Slag traps work well if maintained properly
Aphids (greenfly/blackfly) 	Aphids particularly like to feed on the sap of fresh green shoots of plants and the tender, younger growth at the tips of branches	<ul style="list-style-type: none"> • Feeder which attracts birds. • Ladybirds • Combination of washing up liquid/soap and water, followed by a strong water jet from a hose • Wipe off insects by hand (if possible) or hose off with a strong jet of water. • If the infection is serious, pinch back to the closest aphid free bud.
Ants 	Ants collect the sticky substance excreted by aphids, so it might look like they are causing the problem with your plants. If you control the aphids the ants will disappear	<ul style="list-style-type: none"> • Ants do little or no damage to plants.
White flies 	<p>They like warm, humid places, so it's worth paying attention to them if you have a greenhouse or polytunnel.</p> <p>They can easily hide among the leaves of plants and, similarly to aphids, suck their sap until they discolor and begin to wither.</p> <p>They especially like tomatoes, pumpkins and cucumbers.</p>	<ul style="list-style-type: none"> • The adult specimens can be caught with lemon-yellow sticky traps • Soapy spray or neem oil • Ladybugs can also be effective against them

Tomato hornworm



They can grow up to 10 cm long.

They usually appear in mid-summer and you can see them until the first frost.

They eat not only tomatoes, but also potatoes, peppers, aubergines

- Due to their size, they are easy to spot and remove them but it needs to be done regularly