



Potentially Harmful Plants



Health and Safety:
Guide to toxin
producing plants that
grow in and around
Allotments

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Introduction



If you are reading this article you likely have access to an allotment or growing space, and understand the joy and fulfilment that can be found in growing your own food. You may very well have also noticed how lots of the fruits and vegetables are much tastier than those brought in supermarkets, and the number of available varieties, colours and shapes increase exponentially. These factors and more are why allotments are so appealing, however when growing your own food it is important to have good knowledge of the crops you are harvesting.



The majority plants grown on allotments are safe to handle, but there are a few exceptions. These plants could be unwanted weeds, wildflowers, perennial shrubs and even parts of fruit and vegetable plants. Wearing gloves, washing hands and covering wounds are considered safe gardening practice with good cause, and mitigate risks involved with the unintentional transferal/ingestion of toxic chemicals.

It is important to understand which plants and equally what parts of plants are safe to ingest, as well as how to prepare them. In many cases this is often common knowledge, especially in the case of potato plants; e.g. only eat the tubers, don't ingest green tubers, and don't consume raw.



Introduction (continued...)



Toxic plant related injuries and hazardous incidences in the UK are very uncommon, but it is important all the same to understand the potential risks outside. Its generally advised not to eat something if you are unsure if it is safe to consume, and most information can be easily acquired online, with plant identifiers, or in books.



You have undoubtedly come across at least one poisonous or harmful plant whether in or outside your allotment. This may come as a surprise but it is important not to let this stop you.



Toxins are found in lots of plants, such as nettles, ivy and leylandii and can cause rashes and allergic reactions, however are considered harmless with the correct knowledge.

Whilst this article doesn't provide an exhaustive list of toxic plants that can be found on allotments or extensive medical expertise, it will aim to highlight some of the key hazardous species, where they can be found, their risks and what can be done to address them, as well as some more commonly found.

Some plants do present a hazard but severe poisoning from plants is severely uncommon in the UK, and both skin reaction and allergy are generally low. Death by poisoning from plant toxins is extremely unusual, and medical professionals have a wide range of knowledge on plants related poisons, symptoms and treatments. It is still very useful to have awareness and understanding on hazardous and toxic plants, especially those in your surrounding area.





Types of hazard



Ingestion

Ingestion is the eating of a substance, in which it is taken into the body and can be intentional, accidental and also by contamination. Plants can also be absorbed by the body through concentrated extracts, brewed teas or inhaled. Toxins from poisonous plants can be released when any toxic part of a plant is eaten, such as the leaves, stems, seeds, berries, roots, bulbs, and flowers, and can be hazardous to health. Ingestion of poisonous plants can cause minor to severe reactions, ranging from headaches and vomiting to seizures and damage to the nervous system, especially if left untreated. Children are at a higher risk of poisoning from the consumption of harmful plant toxins, as are learning to explore their environment. If you think someone has ingested poisonous plant material you should seek immediate medical advice and record as much information about the plant as possible to help identify the toxin. To reduce the risk of contamination you should always wash your hands after gardening, and especially before eating and drinking.



Contact

Contact with plant poisons refers to plant material touching any area of exposed skin. Toxins and harmful chemicals are often present in plant sap, which is excreted from any wounds. The toxins act as chemical defences and exposure can cause skin reactions such as rashes, burns and blisters. The extent of harm and consequently severity of reaction usually depends on the chemicals toxicity, dosage/level of exposure, and sensitivity of the affected organism. If someone have an allergy to a specific toxin the reaction will unsurprisingly can be much worse, requiring more immediate medical attention as the reaction progresses or worsens. Generally it is recommended to wear gloves, long sleeves and full length trousers when gardening to reduce risk of contact. Using the correct tools and keeping tools well maintained, for example sharpening secutares, can also create cleaner wounds and reducing the quantity of sap released and so lower the potential exposure.

Fungi

At the Papillon Project we are unable to support school's growing or foraging mushroom, so consequently don't actively encourage it, though some schools do. If you do want to try growing mushrooms it is probably best you do so using a certified kit, so you should always know the exact species of mushroom you are growing.

There are over 100,000 species of fungi and of the 3000 species which produce mushrooms, only 200 can be eaten by humans. Mushrooms can vary slightly by shape, colour and size within a species, and yet look incredibly similar to other species. Inedible mushrooms can cause a range of reactions, from mild to severe, if you are unsure of a fungi species, then it is often best to avoid it. Touching them is usually fine so long you wash your hands thoroughly afterwards, though some mushrooms may have an irritating milky sap, powder or spores released, so it is often best to wear gloves and long sleeves and full length trousers. Some mushroom spores could also irritate the throat so it is also often best to keep some distance between your face and the fungi in question.

Always identify a fungi first by consulting ID guides, taking pictures of the tops, sides, gills and stem of the fungi and consulting a fungi expert. If you do harvest and consume wild fungi you are risking your own safety, so it may be best to avoid fungi at allotments when teaching and working with children.





Actions



If you believe you have found a poisonous plant in your allotment, take necessary precautions to keep other safe, for instance adding a temporary barrier or safety tape/netting around the plant. You should try to identify the plant as best as possible using identifying apps, websites and books. You should take photos and record accurate descriptions of the plant and its features and consult an expert to assist with its identification. It may be sensible to consult a more experienced gardener to assist in its identification, and local council if potentially quite harmful. If in any doubt you should remain cautious, and avoid contact with the plant.

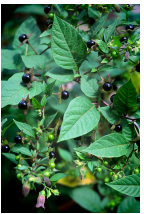

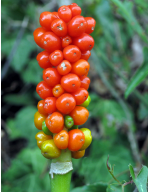


Depending on the plant you should then take the appropriate measures to remove it if necessary. Plants such as Nightshades can be carefully dug up, removing the plant and berries as cleanly as possible, however hogweeds may require more attention. Information regarding the removal of poisonous plants can be found online via your local council or government websites. It is always best to wear adequate PPE or personal protective equipment when working with potentially harmful plants which will vary based on the toxicity; e.g. gloves, full length clothing, dust masks, face shields, boots. If you don't feel confident enough to remove a harmful plant yourself, you should contact an experienced gardener, your local gardener's association or local council for advice, or speak to a contractor specialising in removal of plants, poisonous plants or invasive species. After removing a poisonous plant it must be correctly and carefully disposed of, some can simply be added to compost or garden waste removal, however some may need to be burnt or removed from site, these plants in question will be stated on government or local council websites. Some plants may die down in the winter, and be easier to remove if perennial, however you should be wary of both annuals and perennials dispersing seed before this.

If you or someone else has come into physical contact with a poisonous plant or toxic plant material you should identify the plant and seek medical advice if concerned or are having a bad reaction. Mild rashes from plants such as *leylandii*, nettles and elder are common and can be soothed with cool water and antihistamine creams. If you have an allergic or bad reaction you should seek medical advice from your local doctor, dial 111 or 999 if requiring immediate medical attention.

If you believe someone has accidentally or intentionally ingested a hazardous plant, the NHS advice is to seek immediate medical help. If they do not appear to be seriously ill and are showing mild symptoms, such as mild discomfort, you should call the 111 NHS medical advice line, however if they are showing signs of being seriously ill, such as vomiting, dizziness, palpitations, breathing difficulties, seizures or loss of consciousness, you should immediately dial 999 and request an ambulance. For more information please visit the NHS website for poisoning.








You should collect as much information as you can about the suspected plant/material, including accurate description, photos, sample (wear gloves and keep in bag if suspected to be harmful in contact) and identification if known. The emergency services and medical staff will also need to know when, how and why the substance was ingested and how much of the substance was ingested, as well as what it was. It is also best to record any symptoms the patient has had, and how long they have lasted, as can be helpful for treatment. Most important of all, do not panic and do not try to make the person sick, as this could irritate the stomach or throat. Keep the person hydrated and comfortable but do not give them food and medication. Follow first aid procedures until medical help is available. **Follow medical advice after treatment.**



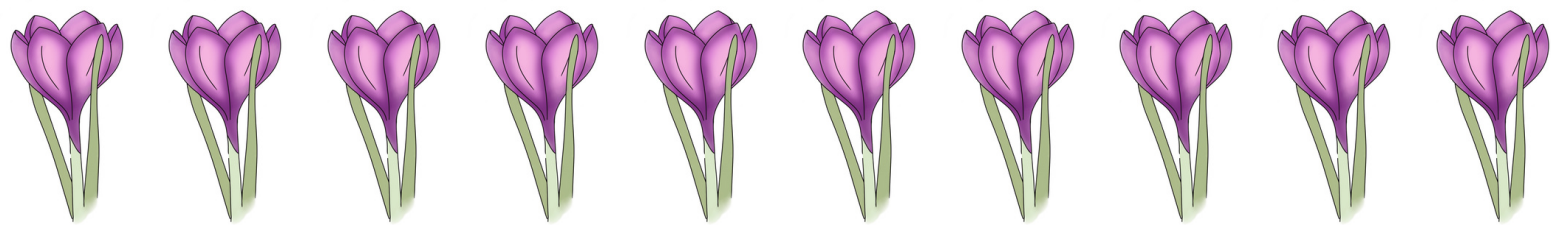
Plant name	Scientific Name	Identification	Where can it be found	Hazard
Deadly nightshade 	<i>Atropa belladonna</i>	Purple-green flower, untoothed, oval leaves, green berries that are black when ripe	Near woodland in southern counties. Grows along pathways and in scrubby areas.	All parts are toxic, especially the berries. Tropane alkaloids in plants induce a range of symptoms from sweating and vomiting to hallucinations and even death.
Foxglove 	<i>Digitalis purpurea</i>	Tall pink and white flower spikes, small tubular flowers, large light green leaves at plant base	Throughout UK along verges and hedgerows. Commonly found near woodland/meadows and also used ornamentally	All parts toxic inducing headaches, skin irritation and vomiting due to cardiac glycosides. Often misidentified with comfrey before flowering as both have large, oval and slightly pointed leaves and also grow in a similar arrangement in its earlier stage, at the plants base
Lords-and-Ladies 	<i>Arum maculatum</i>	Large arrow-shaped, purple-spotted leaves at plant base, yellow-green hood with brown flower spike later producing green berries ripening from top, red when ripe	Near woodlands and hedgerows, usually where there is damp soil and shade	All parts can induce allergic reactions with poisonous berries. Plant barbs can irritate skin, while ingestion can induce breathing and stomach problems.
Monkshood 	<i>Aconitum napellus</i>	Blue-hooded flowers in on tall flower spikes, though cultivars also have pink, yellow and white flowers	Damp UK woodlands, meadows, and ditches in southern counties	All parts are highly poisonous, especially the roots. Toxins affect heart and can be transferred to cuts from skin contact.
Poison hemlock 	<i>Conium maculatum</i>	Up to 2m tall, hollow purple stained stems, clusters of small white flowers from several small flower spikes, unpleasant smelling	Damp edges of woodland. Ditches, streams, and pathways	Consumption of any part can cause respiratory paralysis due to toxic alkaloids. Often confused with other carrot family (Apiaceae) species.







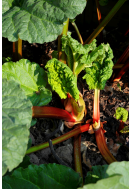











<p>Hogweeds</p> 	<p><i>Heracleum</i> sp.</p>	<p>Tall green and purple blotched stalks (+2m), medium to large white flat flower clusters, curled serrated leaves at base, giant variety has purple tinge, spotted stalks and thin spikes</p>	<p>Found along path and woodland verges. Prefer damp rich soils. Often found in large clusters of same plant species.</p>	 <p>All species listed here contain high amounts of toxins in sap that when exposed to bare skin can induce mild to severe irritation. Those which are not usually grown as herbs or vegetables, if consumed, can cause stomach issues. Most hazardous when in flower with large stalks and leaves exposed.</p> 
<p>Parsnip</p> 	<p><i>Pastinaca sativa</i></p>	<p>Yellow-white root, tufts of serrated green leaves, small yellow flowers arranged on spikes</p>	<p>Grown all over UK in allotments for consumption. Wild varieties grown in rough grassland.</p>	
<p>Dill</p> 	<p><i>Anethum graveolens</i></p>	<p>Thin green leaves, recognisable smell, tall green-white flat flower heads arranged on thin spikes</p>	<p>Grown all over UK as a edible herb. Prefers free-draining soils. Goes to seed quickly.</p>	
<p>Cow parsley</p> 	<p><i>Anthriscus sylvestris</i></p>	<p>Tall green and purple blotched stalks (+2m), medium to large white flat flower clusters, curled serrated leaves at base</p>	<p>Found along path and woodland verges. Prefer damp rich soils. Often found in large clusters of same plant species.</p>	
<p>Fennel</p> 	<p><i>Foeniculum vulgare</i></p>	<p>White large bulbs, soft green leaf fronds, flat and yellow flowers arranged on spike</p>	<p>Grown all over UK on allotments for consuming bulb and seeds.</p>	





<p>Celery</p> 	<p><i>Apium graveolens</i></p>	<p>Long lined green stems, white, and pink stalks, tufts of green (similar in colour to stalk) serrated leaves, small white flower clusters</p>	<p>Grown all over UK on allotments for consuming stalks and seeds.</p>	<p>All species listed here contain high amounts of toxins in sap that when exposed to bare skin can induce mild to severe irritation. Those which are not usually grown as herbs or vegetables, if consumed, can cause stomach issues. Most hazardous when in flower with large stalks and leaves exposed.</p> 
<p>Parsley</p> 	<p><i>Petroselinum crispum</i></p>	<p>Thin dark green stalks, tufts of serrated or curly green leaves, thin green tubular leaves</p>	<p>Grown all over UK on allotments for consuming leaves.</p>	
<p>Bishop's weed</p> 	<p><i>Ammi majus</i> L.</p>	<p>Small flat white flower clusters, flat green-white variegated leaves</p>	<p>Prefers free draining soils and often seen in rough grassland or verges.</p>	
<p>Celeriac</p> 	<p><i>Apium graveolens</i> var. <i>rapaceum</i></p>	<p>Large brown root bulb, thick green stalks, tufts of serrated leaves.</p>	<p>Grown all over the UK in allotments for the root bulb.</p>	
<p>Wild angelica</p> 	<p><i>Angelia sylvestris</i></p>	<p>Purple-green stalks, serrated leaves at base, global cluster of white-purple flowers</p>	<p>Found in poor quality soil, and often at the edge of fields and meadows</p>	
<p>Rhubarb</p> 	<p><i>Rheum rhabarbarum</i></p>	<p>Thick green and pink stalks with large dark green triangular, wrinkly leaves</p>	<p>Grown in rich fertile soils. Wild varieties found in marshland and meadows</p>	



<p>Potatoes</p> 	<p><i>Solanum tuberosum</i></p>	<p>Oval, green leaves, thick green tubular stems, producing edible white, yellow, red, pink tubers and newer leaves can be slightly fuzzy and curled initially</p>	<p>Grown primarily in nitrogen rich soils in fields/ veg patches/ allotments but wild varieties can be found in woodland, road verges and meadows</p>	<p>Potatoes that have turned green contain the toxin solanine which is poisonous to consume, and any other part of the plants is poisonous. Related to deadly night shade, and all parts of the wild varieties are poisonous.</p>
<p>Tomatoes</p> 	<p><i>Solanum lycopersicum</i></p>	<p>Red, yellow, green, and brown fruits, vine plants, green serrated leaves, strong smell</p>	<p>Prefers rich free draining soils, and a higher temperature and humidity, so often grown in greenhouses/ polytunnels</p>	<p>Contains tomatine which is mildly toxic, though in extremely large doses can cause gastrointestinal, liver and even heart problems. Is a member of the nightshade family, and leaves and stems are mildly poisonous</p>
<p>Asparagus</p> 	<p><i>Asparagus officinalis</i></p>	<p>Young shoots have green stems with purple heads, mature stalks have bushy fronds and produce red fruits</p>	<p>Grown in veg patches in rich free draining soils, but wild varieties can be found in areas with sandy soils</p>	<p>Some toxins are contained in young shoots, but causes a mild response and is removed if cooked. Plants become toxic later in the season and the red berries are also toxic to eat.</p>
<p>Poppies</p> 	<p><i>Papaver</i></p>	<p>Vary in height and colour, blousy blooms and paper like petals</p>	<p>Prefers poor quality solid, that is free draining</p>	<p>All poppies exudes a milky white sap which contains alkaloids, poisonous in large volumes so all raw material should be avoided, only seeds are consumed</p>
<p>Ivy</p> 	<p><i>Hedra helix</i></p>	<p>Dark green glossy leaves, evergreen, clusters of yellow green flowers later producing black berries</p>	<p>Grows in any soil, but prefers well or partially well drained, often climbing</p>	<p>Ivy contains harmful compounds which can cause irritation and breathing difficulties, also harmful if eaten</p>
<p>Nettles</p> 	<p><i>Urtica diocea</i></p>	<p>Green 'fluffy' leaves with small green cluster of flowers, stinging hairs</p>	<p>Prefers high quality, loamy soil</p>	<p>Stinging nettle hairs contain formic acid after piercing the skin, which causes the 'sting' reaction (redness and pain), though are edible if eaten/prepared correctly</p>
<p>Daffodils and crocus</p> 	<p><i>Narcissus, crocus</i></p>	<p>varying colours and shapes but both grow from bulbs</p>	<p>Prefers high quality well drained soil</p>	<p>All parts of both plants are toxic, especially the bulbs, and can cause pain and vomiting if ingested, also causes irritation when handling plants or bulbs</p>



For more information on toxic plants please visit NHS, government, local council information and other helpful websites such as:



- NHS.UK
- GOV.UK
- RHS.ORG.UK
- WOODLANDTRUST.ORG.UK
- NORFOLKWILDLIFETRUST.ORG.UK
- NORWICH.GOV.UK
- NORFOLK.GOV.UK
- NORTH-NORFOLK.GOV.UK
- TEACHINGGARDENPWC.WORDPRESS.COM
- FARMERSADVANCE.COM
- PBA-SOLUTIONS.COM

