

Horticulture 2023 Newsletter

No. 5 February 7, 2023

1712 Claflin, 2021 Throckmorton Plant Science Cntr.
Manhattan, KS 66506 (785) 532-6173

Video of the Week: [Pothos and Philodendron: Easy Care Plants](#)

VEGETABLES

The Difference Among Determinate, Semi-Determinate and Indeterminate Tomatoes



Tomatoes are often classified as determinate, semi-determinate or indeterminate. Determinate plants produce one large crop and then virtually nothing thereafter. They are favored by commercial growers that want to harvest most of the fruit from one picking. They then use succession plantings where a new crop is planted on a set schedule to have fruit production throughout the season. Mature plants are smaller than other types and can be planted closer together to get the most tomatoes from a set space. Primo Red is a variety that is strongly determinate.

Indeterminate plants are the traditional tomatoes that never stop growing. They are capable of producing fruit throughout the season unless disease stops production or until frost kills the plant. They do best with support as they can reach six feet tall when staked or caged.

Semi-determinate plants are more compact than indeterminate types but are also capable of producing fruit throughout the season.

Most of the varieties available to home gardeners are either indeterminate or semi-determinate. Though both are capable of producing fruit throughout the season, our hot Kansas summers often cause a dry spell in production of both types. Tomatoes are less likely to set fruit when night temperatures remain above 75 degrees and day temperatures are above 95. Hot, dry winds make the situation worse.

Gardeners with limited space will likely prefer indeterminate or semi-determinate types to stretch out the harvest season. If there is space, you may want to grow a combination of all three with the determinates used to produce a large harvest for canning or tomato juice and the remainder for fresh eating. (Ward Upham)

PESTS

Fungus Gnats



Fungus gnats are small insects (1/8 to 1/10 inch long) that are common in high-organic-matter houseplant soils that are kept moist. Though adults are mosquito-like in appearance, they do not bother humans or pets. It is actually the larvae or maggots that can injure plants by feeding on the roots. Symptoms include sudden wilting, loss of vigor, poor growth and yellowing leaves. Use of sterile media and avoiding overwatering your houseplants can help prevent infestations. Existing infestations can be controlled *Bacillus thuringiensis* v. *israelensis* which is sold under the names of Gnatrol and Knock-Out Gnats. (Ward Upham)

MISCELLANEOUS

Bringing Houseplants Down to Size



We sometimes receive calls from gardeners who wish to donate houseplants that have outgrown their location. In most cases, we don't have room to accept plants and suggest that people bring them down to size by air-layering. Air-layering is a process where a branch or the main stem is encouraged to form roots while still attached to the parent plant. After rooting, the original plant is discarded and the newly rooted one is potted as a replacement. Though this propagation technique cannot be used on all houseplants, it does work well on many that tend to outgrow their boundaries including croton, dracaena, dieffenbachia, Norfolk Island pine, rubber plant and schefflera.

It is best to choose wood that is about 1 year old. Older or more immature wood often roots poorly, if at all. Any place on the stem that is of the proper maturity can be used, but a convenient location is often about 12 inches from the tip. Following are the steps required for air-layering:

- * Leaves should be removed around the area to be air-layered.
- * Wound the stem. This can be done by making a slanting cut upward, an inch or more in length and halfway through the stem. Place a portion of a toothpick in the cut so it cannot close and heal. If the stem is seriously weakened, use a stick or dowel "splint" to prevent breakage.

Another method that works well is to strip the bark completely around the stem in a band one-half to one inch wide.

- * Apply rooting hormone to the wounded surface of the cut or the stripped portion of the branch.
- * Pack a baseball-sized wad of moist, unmilled sphagnum peat moss around the wounded area so it forms a ball. This is where new roots will form. It is important to use the long, stringy unmilled peat moss rather than the more common milled material so peat moss does not fall away from the stem when released. Even unmilled peat moss may need to be secured with string to keep it in place.
- * Wrap the ball of sphagnum peat moss with clear plastic wrap. Be sure to use enough wrap so that the plastic overlaps and prevents the ball from drying out. Secure the top and bottom edges of the wrap closed with electrical tape, string or other convenient fastener.

Roots may appear in as little as a month though it may take much longer for the plant to be ready for transplanting. Check periodically to be sure peat moss remains moist. Water if needed. When roots have filled the peat moss, the plant is ready to be severed from the parent and transplanted. (Ward Upham)

Plants Recommended for Kansas



If you have had trouble finding a listing of plants recommended for Kansas, visit our web page devoted to this topic. We have links to a wide variety of plants including iris, daylilies, fruit, vegetables, turfgrass, low-maintenance roses and tree recommendations. The tree recommendations are broken out by areas of the state. We also list recommended low water use plants. You can find this page at <http://hnr.k-state.edu/extension/info-center/recommended-plant/s/>

We also have images of hundreds of the following:

- Varieties of iris, daylilies, roses and peonies found in the University Gardens Collection Gardens at <http://www.k-state.edu/gardens/gardens/collections/> (Ward Upham)

Poisonous Plants



Some of the plants we commonly use in our homes, gardens and landscapes are poisonous. We often have requests from parents who want to make sure their plants are safe for young children.

The following poisonous plant list came from various University websites.

Flowers

caladium (all parts)
cardinal flower (all parts)
castor bean (seeds and leaves)
daffodil (all parts)
flowering tobacco {Nicotiana} (leaves and flowers)
four-o'clock (roots and seeds)
foxglove (all parts)

hellebore (all parts)
iris (all parts)
lantana (unripe fruits and leaves)
larkspur {Delphinium} (all parts)
lily of the valley (all parts)
lupine (all parts)
monkshood (all parts)
poppy (all parts except ripe seeds)
snowdrop (bulb)
spurge (milky sap)
star-of-Bethlehem (all parts)
sweet pea (seeds, seedlings, and pods)
tulip (bulbs)

Houseplants

Chinese Evergreen
anthurium (all parts)
aloe (sap if ingested)
calla lily (all parts)
croton (seeds, leaves, and stems)
crown-of-thorns (milky sap)
dieffenbachia (all parts)
elephant ear (all fig (leaves, fruits, and sap)
Jerusalem Cherry (all parts)
mistletoe (all parts)
Philodendron (all parts)

Fruits

apple (bark, leaves, seeds)
pear (bark, leaves, seeds)
apricot (bark, leaves, seeds, pits)
peach (bark, leaves, seeds, pits)
nectarine (bark, leaves, seeds, pits)
plum (bark, leaves, seeds, pits)
cherry (bark, leaves, seeds, pits)
avocado (leaves, unripe fruit, bark, and seeds)

Landscape plants

azalea (leaves and flowers)
black locust (all parts)

Boston ivy (berries)
boxwood (leaves and twigs)
buckeye (leaves, shoots, bark, flowers, and seeds)
burning bush (all parts)
cherry (leaves, twigs, bark, and seeds)
clematis (leaves)
elderberry (roots, stems, bark, leaves, and unripe fruits)
English ivy (all parts)
golden chaintree {Laburnum} (all parts)
holly (berries and leaves)
horsechestnut (all parts)
hydrangea (leaves and buds of some species)
Kentucky coffee tree (seeds, fruit pulp, leaves, twigs)
oak (acorns, leaves, and young shoots of some species)
poison sumac (all parts)
privet (all parts)
rhododendron (leaves and flowers)
Virginia creeper or woodbine (berries)
yew {Taxus} (all parts except the fleshy red cover on the seed)
wisteria (all parts)

Vegetables

potato (green skin, buds, and sprouts on tubers, also fruits and foliage)
rhubarb (leafy blade, not the leaf stalk)

For more information, consult the following references.

Common Poisonous Plants and Mushrooms of North America, Turner and Szczawinski, Timber Press, Inc. ISBN 0-88192-179-3

Potentially Poisonous Plants in the House and Garden,

<http://www.northcarolinahealth.com/poisonous-house-plants-and-vegetables.php> (Ward Upham)

Coldframes and Hotbeds



Uses of Coldframes Hotbeds

These mini-greenhouses can be useful for serious gardeners. Though often used for hardening off seedlings, they can also be helpful in extending the growing season in the fall for cool-season vegetables such as lettuce, kale, green onions, and radishes. You may also want to start pansies in the fall, overwinter them in the cold frame, and set out large plants that give immediate color in the spring. Cold frames also can be used to overwinter nursery plants or give the cold treatment needed to force bulbs. In these last two cases, the cold frame is covered with a tarp or something similar late in the fall just before the ground freezes so that the temperature hovers just above freezing. During the summer, you can remove the top and use the structure as a nursery. A hotbed can function like a coldframe if not heated. Adding heat allows plants to be started earlier.

Cold frames and hotbeds used to require almost constant attention during the day due to venting requirements. Venting is absolutely necessary on bright, sunny days, even if the outside temperature is relatively cool. If the frames are not vented in a timely manner, the plants can easily overheat. Venting is normally done by having the sash hinged to the main structure. This sash is propped open to let excess heat escape whenever temperatures demand. Though sashes can be propped open by hand, today we have automatic ventilators that use a temperature-sensitive compressed gas to automatically open sashes.

These are often called solar vents as they rely on the sun to heat up the interior of the coldframe or hotbed to activate the vent. Solar vents do not require an external power source and can be set to open at different temperatures. An important feature that many solar vents do not have is the ability to release quickly so the lid on the coldframe or hotbed can be opened completely. This makes watering much easier. As mentioned, many solar vents do not have the quick release feature. Two that do are the Univent Standard and Agetc Automatic Vent Opener. If you know of any others, let me know and we can list them in a later newsletter.

Basic Design of Cold frames and Hotbeds

The structure of both cold frames and hotbeds is the same. Basically it's a box covered with glass, plastic or clear fiberglass sash. The box size varies but is often 5 to 6 feet deep and 6 to 12 feet wide. Height also varies but is often about 18 inches in the back and 12 inches in the front. The slope should face south so that rays from the winter sun can be captured more easily.

The only difference between a cold frame and a hotbed is that hotbeds contain a heat source. In the early part of last century, that heat source was often 12 to 24 inches of fresh, straw-laced horse manure placed in a pit under the structure. Today, electric heating cables are often used. Hotbeds are more versatile than cold frames and allow young, tender plants to be started earlier in the year.

Cold frames and hotbeds can be purchased, or you may want to build your own. Plans for constructing either structure can be found [here](#).

Contributors: Ward Upham, Extension Associate

Division of Horticulture
1712 Claflin, 2021 Throckmorton
Manhattan, KS 66506
(785) 532-6173

For questions or further information, contact: wupham@ksu.edu OR cdipman@ksu.edu

This newsletter is also available on the World Wide Web at:

<http://hnr.k-state.edu/extension/info-center/newsletters/index.html>

The web version includes color images that illustrate subjects discussed. To subscribe to this newsletter electronically, send an e-mail message to cdipman@ksu.edu or wupham@ksu.edu listing your e-mail address in the message.

Brand names appearing in this newsletter are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

K-State Research and Extension is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to a physical, vision or hearing disability, or a dietary restriction please contact Extension Horticulture at (785) 532-6173.