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SAVING SEED AND CROSS POLLINATION

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This is the time of year when people ask about saving seed from vegetable gardens to plant next spring. This is recommended only with open-pollinated vegetables as their seed genetics are more stable.

A concern with saving seed is if a plant cross pollinates with another plant and seed genetics change. This can result in an odd-shaped, colored or flavored fruit the next season. Or an off-tasting or odd-shaped root or leaves. Saving seed from year to year may also increase disease issues.

The fruit is most affected. The fruit of a plant is the part that contains seed. With vegetables, snap beans, cucumbers, squash, peppers and so on are fruits. If the vegetable being eaten contains seed, the part of the plant being eaten is the fruit as opposed to carrot roots, broccoli flowers or lettuce leaves.

Vegetables are classified as open or self-pollinated, wind pollinated or insect pollinated. Only seed from self-pollinating vegetables are recommended for saving. Wind and insect pollinated vegetables are more likely to out-cross.

Cross pollination does not affect this year's fruit, but it affects seed genetics. It is okay to plant vegetables that can cross near one another, but if seed is saved and planted the next year, odd produce can develop.

Cross pollination occurs between varieties and between some vegetables within the same family. Melons can cross with other types of melons but not with peppers or squash. Some squash, pumpkins and gourds can cross with one another but not with corn or eggplant.

Common self-pollinating vegetables are tomatoes, beans, peas and lettuce. Part of the reason is they have complete flowers. The pistil (female portion made up of the stigma, style and ovary) and the stamen (male portion made up of pollen, anthers and filaments) are found within the same flower.

Open-pollinated vegetables tend to have little out-crossing. However, if different varieties or plants in the same family are planted too close together, crossing could occur. While these plants do not need insects for pollination, insects will visit them while foraging and carry pollen between plants.

If you plan to save seed from open-pollinated vegetables, avoid planting different varieties next to one another. Ideally, plant a slightly taller plant between the different varieties or even related vegetables.

Wind pollinated vegetables include corn, beets, Swiss chard and spinach. With the last three crops, these are not often left to bloom and produce seed since we eat the roots and leaves. Only crop seed producers need to be concerned about cross pollination.

Since we eat sweet corn seed, this is one vegetable where cross pollination affects the current year's crop as well as seed genetics. Sweet corn pollinated by field or ornamental corn may not be as tasty. Isolation by using distance is recommended for sweet corn.

Many vegetables are insect pollinated. Some of these have incomplete flowers. The flowers on the plant are either pistillate (female) or staminate (male) and insects are needed to transfer pollen from stamens to pistils.

Pollinators visit many plants as they forage and the risk of cross pollination is high with insect pollinated plants. Avoid saving seed from these vegetables.

Seed from hybrid varieties should also not be saved. Hybrids are the result of a series of crosses between related plants to obtain desirable traits such as disease resistance. If seed is saved, genetics are likely to revert back to one of the parents or grandparents.

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People may wonder why they have so many weeds and where they keep coming from. After all, they control them by hand-pulling or with herbicides so why do weeds keep returning. We can kill many weeds, but we cannot eradicate them. Weed seeds blow in, wash in with surface water, or are introduced with applications of soil amendments like manure to gardens. Birds and other wildlife distribute weed seeds; and the soil itself is full of seeds. The majority of weeds come from weeds we allow to go to seed. Any time a weed is blooming, remove and destroy it promptly before it disperses seeds. Applying herbicide to a blooming weed will not prevent seed production. By the time herbicides kill already blooming weeds, most will have dispersed seed. For example, dandelions typically produce 15,000 seeds per year. By not allowing weeds to go to seed, we can have significantly fewer weeds each year.

Rain continues to be in very short supply. Fall is a critical time to water landscape plants before the soil freezes. A deep watering is needed. If you've been relying on an automatic lawn irrigation system for watering, this might not be deep enough for trees and shrubs. While many plants would benefit from a deeper watering, priority should be given to evergreen trees and shrubs, and young plants or those planted in the last few years. And what is meant by a deep watering? For trees and shrubs, moisten the soil to a depth of 8 to 12 inches. Much deeper would be a waste of water. For evergreens, moisten the soil from the trunk out to at least 4 to 6 feet beyond branch tips or further. For shade and ornamental trees, moisten the soil from the trunk to at least the dripline of the tree or about six feet beyond the drip line. For shrubs, deeply moisten the soil from the base of the stems out to a distance equal to the shrub's height.

Pruning trees from now until after leaf drop is best avoided. With cooler weather, woody plants move sugars and other materials from leaves to roots, branches and trunk storage areas just prior to leaf drop. Avoiding pruning at this time helps maximize stored energy reserves. And pruning later in the fall may reduce cold hardiness of woody plants. While we do get away with pruning at this time of year, especially light pruning of 10 percent or less and removal of dead wood, trees are currently stressed by environmental extremes and we need to do all we can to reduce additional stress. At the very least, delay heavy pruning, removal of 10 to 25 percent of woody material, until spring. Dead wood does not count in this percentage. And as always, do not treat wounds with any type of paint or tree wound dressing. This interferes with the trees response to sealing pruning wounds and can lead to wound decay.

Fall is the time for insects and spiders to accidentally invade homes as temperatures cool. The most frightening group of fall invaders seems to be spiders; and of these, wolf spiders create the most fear due to their size and sudden movements. Wolf spiders are the largest spiders in Nebraska. Their bodies alone can reach up to one and one-third inch long and this does not include their legs which are long and hairy. They have been mistaken for tarantulas. Many wolf spiders are nocturnal or active at dawn and dusk. They do not build webs to capture prey, but are active hunters that wait patiently for their prey and then suddenly pounce. Hence the name "wolf spider". Wolf spiders are not venomous. Other than the fear they create, they're harmless. As with all fall invaders, the best means of keeping them out of the home is with caulking, weather stripping, tight fitting doors and windows, and screens in good repair.

This is the time of year to prepare for wrapping the trunks of young, tender barked trees, such as red maples, to protect the bark from winter sunscald, but do wait awhile to apply the wrap. Not all young trees need to be wrapped. When tree wrap is used, only use it on tender barked trees during their first winter after transplanting; when moving trees; or if a nursery guarantee requires it. Wait until after a hard freeze or after leaves have dropped. On young trees, wrap covers photosynthetic tissue that produces food the plant needs for root establishment. If wrapped too early, less stored food could be produced. When wrapping tree trunks, begin at the bottom of the tree and wrap upwards, being sure to

overlap the wrap so no part of the trunk is exposed. Remove all wraps in early spring. If left on too long, wraps can girdle young trees; and moisture may build up beneath tree wrap to promote insects or decay organisms.