

Growing the “Bitter” out of Cucumbers

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There’s nothing worse than biting into a bitter cucumber. It ruins the whole fresh garden salad. It’s even worse when the cucumber comes from your own garden! Did you grow some bitter cucumbers this summer? If so, read on to learn what you can do next year to avoid this problem.

Cucumber Botany. Cucumbers are members of the cucurbits family of vegetables, which includes squash, melons and pumpkins. Cucurbits contain chemical compounds known as terpenoids that are in some measure responsible for flavor and scent. The terpenoids responsible for bitterness in cucumbers are cucurbitacins. These substances are present in the roots, stems, leaves and fruit. Specifically, two genes account for the bitter taste or lack of, a dominant one that makes the cucumber bitter and a recessive one that inhibits the formation of cucurbitacins, thus suppressing the bitterness. Nevertheless, the accumulation of cucurbitacins is generally not heavy enough to make the fruit bitter, or if it is, the concentration is at the stem and just under the skin. Bitterness in cucumbers also appears to be controlled by the presence of an enzyme known as elaterase. Elaterase converts cucurbitacins to non-bitter compounds. Scientists believe that the elaterase activity operates independently of the genes that control bitterness, and that when the level of bitterness in cucumbers varies from year to year, it is due in part to environmental effects that either stimulate or suppress the elaterase activity. It is the presence of cucurbitacins in cucumbers that also cause digestive distress for some folks by making them burp.

Environmental Factors. Cool temperatures and shady sites seem to trigger bitterness in cucumbers. Researches note that temperature variations of more than 20 degrees, moisture stress, and storage of cucumbers on the vine too long or near other ripening vegetables also cause bitterness. They note, however, that fertilization practices, plant spacing and irrigation frequency had little consistent effect on the number of bitter cucumbers produced.

Recommendations. Start your cucumbers in the spring by direct seeding when the soil temperature reaches 60 degrees. Avoid growing them in cool or shady locations. As with all vegetables, fertilize and mulch. Keep them well watered and adjust the irrigation when there are heat spells to avoid stressing the plants. Pick the cucumbers when they are smaller rather than larger. Perhaps one of the best ways to reduce the chance of growing bitter cucumbers is to pick hybrid varieties, especially ones designated as “burpless”. These varieties have been specially bred to be bitter-free.

On Saturday, September 29, Master Gardeners present “Yellow Starthistle Control.” Learn new techniques and procedures for the control of this noxious weed. The class is offered at no charge and starts at 9:00 a.m. This class will be held in the Government Center Hearing Room, Building C at 2850 Fairlane Court in Placerville.

Master Gardeners are available to answer home gardening questions Tuesday through Friday, 9 a.m. to noon, by calling (530) 621-5512. Walk-ins are welcome. The office is located at 311 Fair Lane in Placerville. For more information about our public education classes and activities, go to our Master Gardener website at http://ucanr.edu/sites/EDC_Master_Gardeners/. Sign up to receive our online notices and e-newsletter at <http://ucanr.edu/mgenews/>. You can also find us on Facebook. Master Gardeners are available to answer questions most Saturdays at the Placerville Farmer's Market and most Sundays at the El Dorado Hills Farmer's Markets.

Do you have plastic feed sacks or plant containers to recycle? Master Gardeners will gladly take them at the Master Gardener Office. Call before dropping them off and thank you for the donation.