Cucumber

(Cucumis sativus)

Recommended Varieties	Disease Resistance
Pickling	
Liberty Hybrid	AAS, ALS, DM, M, PM, S
Saladin	AAS. DM, CMV, PM
County Fair 83	AN, DM, M, PM, S
Pickle Bush (compact, suitable for containers)	CMV, PM
Pot Luck (container only)	CMV
Slicing	
Dasher 11	CMV, DM, PM, S
Sweet Success	AAS, AN, ALS, CMV, DM, PM, S
Sweet Slice (burpless)	AN, CMV, DM, S, PM
Burpee Hybrid	DM, M
Bush Champion (suitable for containers)	M
Parks Bush Whopper (container)	
Pot Luck (container only)	CMV
Salad Bush (suitable for containers)	
Spacemaster (bush, suitable for containers)	M
Slice Nice	AN, DM, S
Slice Master Hybrid	ALS, AN, DM, M, PM, S

Varieties of cucumber include both the slicing or fresh salad type and the pickling type (which can also be used fresh), and dwarf-vined or bush varieties. New varieties are being released, which are advertised as all-female, or gynoecious types. On a normal cucumber plant, the first 10 to 20 flowers are male, and for every female flower, which will produce the fruit, 10 to 20 male flowers are produced. These facts indicated to plant breeders that production could be increased greatly if many more female flowers were produced. Some of the new varieties produce plants that have only female flowers, while others have a greater proportion of female to male flowers. These plants tend to bear fruit earlier, with a more concentrated set and better yields overall.

In order for the flower to develop into a fruit, pollen must be carried by bees from male flowers on the same plant or on different plants to the female flower, the one with the tiny swollen pickle. Gynoecious cucumber flowers are pollinated by male flowers from other plants, the seeds of which are usually included in the seed packet Poor cucumber set is common during rainy weather when bees are inactive. See the review regarding Fruit Set Problems In Squash, Melons and Cucumbers In Home Gardens. If pesticides are needed, use them late in the afternoon to avoid harming the bee population.

Parthenocarpic cucumbers are all female and are seedless because the fruit is produced without being pollinated. This type is usually grown in greenhouses, but if it is planted near others, pollination will occur and seeds will form.

Burpless cucumbers are long and slender with a tender skin. Through plant breeding, the bitterness associated with the burp has been removed. Other causes of bitterness in cucumbers include temperature variation of more than 20 degrees, moisture stress, and storage of cucumbers near other ripening vegetables.

Most varieties of cucumber vines spread from row to row. Training on a cage, trellis or fence along the edge of the garden will correct this and also lift the fruit off the soil. Trellising gets leaves up off the ground so that they dry off faster. Also, if the vines are trellised, the gardener is less likely to step on the vines and there is no need to move the vines for weeding or other purposes, reducing the risk of damage. If trellising is not possible, there are many excellent bush varieties of cucumber available now. Most of them produce well for a limited amount of space and may be a desirable alternative in a small garden. If vines are not trellised, avoid destroying blossoms or kinking vines by gently rolling the vines away rather than lifting them when searching for harvestable fruit. In non-trellised plantings, organic materials are useful in the summer to return moisture and keep the fruit clean.

Working in the vines when leaves are wet could spread disease. Wait until after morning dew or rain evaporates. There has been a significant increase in disease resistance in cucumber varieties in recent years. Select resistant varieties when possible.

Harvest cucumbers when they are about 2 inches long up to any size before they begin to turn yellow. Remove fruits by turning cucumbers parallel to the vine and giving a quick snap because it prevents vine damage and results in a clean break.

Bitterness In Cucumbers[1]

Each year, some home gardeners experience bitterness in cucumbers which they have grown for fresh use or pickling. Bitterness is due to the formation of two cucurbitacins (terpenoid compounds) that impart a bitter flavor to seedlings, roots, stems, leaves, and fruit. Two genes are involved in controlling bitterness in cucumber; a dominant one produces extremely bitter fruit and a recessive one inhibits the formation of curcurbitacin in foliage and fruit. An enzyme, elaterase, will hydrolyze cucurbitacins to non-bitter compounds. Elaterase activity is believed to be controlled independent of the genes controlling bitterness, however.

Usually the bitter principal does not accumulate very heavily in the fruit. When it does, it accumulates non-uniformly among fruits and within the fruit. The cucurbitacins are likely to concentrate at the stem end and in and just under the skin of the fruit.

The amount of bitterness in cucumbers appears to vary from year to year and from location to location. Such a phenomenon may occur because elaterase production is stimulated or depressed under certain environmental conditions. Cool temperatures can enhance bitterness, but fertilization

practices, plant spacing, and irrigation frequency have exhibited little consistent effect on the number of bitter cucumbers produced. Varieties vary widely in their tendency to be bitter.

Recommendations. Avoid growing cucumbers in cool or shaded locations and provide uniform moisture and ample nutrients to ensure a good yield of quality fruit. Select the new hybrid varieties since bitterness has been much less of a problem in these. If fruits express bitterness, it can usually be eliminated by peeling away the skin and outer flesh and removing the stem end. The direction of peeling will not have an effect on the spread of bitterness.

[1]*by Dennis Pittenger, Area Environmental Horticulturist, Southern Region, University of California Cooperative Extension. Source. Vegetable Briefs* (223), June *1983.*

Nutritional Value of Cucumber

Serving size:	1/2 cucumber, raw	Primary Nutrients		%RDA(m)	%RDA(f)
Calories	21	Vitamin C	6 mg	10	10
Fat	0.3 g	Folic Acid	21 mcg	11	12
Calories from fat	13%				
Cholesterol	0				
Sodium	3 mg				
Protein	0.9 g				
Carbohydrate	4.5 g			% Min Requirement	
Dietary Fiber	1.5 g	Potassium	115 mg	6	

Problem Diagnosis for Cucumber

What the Problem Looks Like	Probable Cause	Comments
Deformed, curled leaves. Small, soft-bodied insects on undersides of leaves. Sticky honeydew or black, sooty mold may be present.	Aphids	Use insecticidal soap.
Fine stippling on leaves. Yellow or brown leaves Leaf undersides are silver-gray with fine webbing and yellow, orange, or red dots.	Spider mites	Use oil or soap spray.

Problem Diagnosis for Cucumber (continued)

What the Problem Looks Like	Probable Cause	Comments
Leaves turn yellow. Honeydew or sooty mold present. Clouds of tiny while insects fly up when plant is disturbed	Whiteflies	Remove infested plants as quickly as possible. Remove lower, infested leaves of plants not totally infested.
Coarse, white stippling on upper surface of leaves. Leaves may turn brown.	Leafhoppers	
Blotches or tunnels on leaves	Leafminers	
Angular necrotic areas on leaves.	Angular leafspot (caused by bacterium that spreads in water)	Avoid wetting foliage with irrigation water
Swelling, beads on roots. Wilted plants. Poor yields.	Nematodes	Rotate crops. Use soil solarization techniques.
Holes chewed in leaves. Scarring of runners, young fruit. Witting. Beetles visible.	Cucumber beetles (Beetles are yellow-groan with or spots.)	Use pyrethrins.
Leaves have small specks that turn yellow, then brown. Vines wilt from point of attack to end of vine.	Squash bug	Trap adults beneath boards in spring. Turn over boards in a.m. and kill bugs. Pick off adults, young, egg masses.
White, powdery spots on leaves and stems. Spots may enlarge and completely cover leaf. Defoliation may occur. Yields reduced.	Powdery mildew (Spores of powdery mildew fungus are spread by wind and air currents.)	Disease is less severe in hot, dry weather. Use resistant varieties. Dusting with sulfur can be effective. Remove old plant debris.
Yellow spots on upper leaf surfaces. Grayish, fuzzy growth on undersides of spots.	Downy mildew (caused by fungus disease)	Use resistant varieties. Remove old plant debris.

Problem Diagnosis for Cucumber (continued)

What the Problem Looks Like	Probable Cause	Comments
Stunted plants, small leaves with irregularly shaped light and dark spots (mottled). Yields reduced.	Mosaic virus (transmitted by aphids)	Remove infected plants as soon as detected. Control aphids. Control weeds. Aluminum foil is effective as soil mulch to reduce infection Deformed fruit is edible.
Poor fruit set	Insufficient pollination Lack of bee pollinators	Hand-pollinate using artist's paintbrush if you have too few bee pollinators. Bee activity may be low due to cool weather or insecticides.
Bitter fruit	Cucurbitacin compounds	See previous page for discussion and recommendations.
Plants wilt and die, beginning with older crown leaves. Light brown streaks occur inside lower stem, runners and root. Visible when split lengthwise.	Verticillium wilt (caused by *Vertfcillium* fungus)	Rotate. Avoid soil previously planted in potatoes, peppers, eggplant, tomatoes, and cucurbits.
Plants wilt suddenly. Roots rot.	Sudden wilt (Caused by *Pythiumfungus)*	Avoid water stress after fruit set. Avoid wetting soil to the crown. Improve drainage. Plant on raised beds.
Water-soaked, sunken, brown or black spot on fruit not restricted to blossom end	Belly rot	Rotate crops. Improve drainage. Stake or cage to keep f ruit off ground.
Excessive vegetative growth	Planting too close together	Increase plant spacing.

Note: Cucumbers *(Cucumis sativus)* are relatives of melons *(Cucumis melo)* -- cantaloupe, honeydew, crenshaw - , winter and summer squash *(Cucurbita pepo var. melopepo), pumpkin (Cucurbita pepo* var. pepo), and watermelon *(Citrullus lanatus).* Collectively, known as the cucurbits, they suffer from similar posts and diseases, evident from the problem diagnosis table.