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When choosing cucumber varieties to suit your needs as a grower, it is helpful to understand the terminology surrounding the different types, their pollination needs, and a few other key features. Preference for one type of cucumber over another varies between individuals and markets. By familiarizing yourself with the terminology, you can better understand differences in the flowering habits, productivity, and eating qualities of the various types.

CUCUMBER POLLINATION REQUIREMENTS & FLOWERING HABITS

Cucumbers are an insect-pollinated crop; their pollen is not transferred via the wind from male flowers to female flowers but by pollinators. The specific pollination needs of different types of cucumbers vary in relation to the timing of their blossoming, the number of male versus flowers they produce, and the rate at which at which the fruits are produced from the female flowers. Relative to pollination requirements, the three main terms are monoecious, gynoecious, and parthenocarpic.

Monoecious

Monoecious cucumber varieties produce both male and female flowers on the same plant. Male flowers tend to bloom earlier than female flowers, and higher temperatures favor the development of male over female flowers.

With monoecious cucumber varieties, two general observations are that the first 10–20 flowers will be male; and for every female flower, 10–20 male flowers will be produced.

Monoecious cucumbers thus yield fruit relatively slowly over a protracted period of time. Monoecious cucumber varieties are suitable for trellising and recommended for growing scenarios where a sustained harvest over time is preferred.

Gynoecious

Gynoecious cucumber varieties produce only (or nearly only) female flowers, and in high concentrations. They are typically earlier and higher-yielding than monoecious varieties. They have been bred and selected specifically for these traits.

Some gynoecious varieties require pollination in order to set fruit, and some do not. With those that do, a monoecious *pollenizer* variety must be planted nearby and bloom concurrently. To facilitate this, the seed of pollination-dependent gynoecious cucumber varieties is customarily blended with 10–15% of a monoecious variety's seed. The pollenizer variety will produce predominantly male flowers that bear pollen for insect transfer to the gynoecious plants' flowers.

If adequately pollinated, the gynoecious plants will produce cucumber fruits over a more concentrated

period of time than those of monoecious varieties. Because of this concentrated fruit set, gynoecious varieties are preferred for mechanical harvest and for other situations where a heavy yield is desired over a short period of time.

Parthenocarpic

Parthenocarpic cucumber varieties do *not* require pollination to produce fruit. They are recommended for growing in protected culture settings, e.g., high tunnels, hoopouses, greenhouses, or wherever pollinating insects are limited or restricted.

If parthenocarpic cucumber plants are effectively isolated from pollen-producing cucumber plants, their fruits will be seedless.

Because parthenocarpic cucumber varieties produce few seeds, their seed is more costly to produce. Parthenocarpic varieties can be identified by the greenhouse symbol in our catalog and on our website.

Parthenocarpic & Gynoecious

Some cucumber varieties are both *gynoecious* and *parthenocarpic*. They characteristically produce the high yields of all-female flowers without the need for pollenizer plants.

Varieties that are both parthenocarpic and gynoecious should be protected from pollinating insects if seedless fruits are desired. Pollination will result in seeded fruits that may be considered unmarketable. Generally, varieties that are both parthenocarpic and gynoecious are grown in greenhouses or hoopouses where insect screens are installed to exclude pollinators.

CUCUMBER TYPES

American Slicing Cucumbers

These varieties produce high yields of large cucumbers with the thickest skins, features which make them a good choice for shipping and field production. Harvested at 7–9" long, they have a moderate number of spines and bumps distributed over dark-green skin. This traditional American type remains the most popular cucumber in some U.S. markets. While the skin is edible, it often imparts a slight bitterness. For best eating quality, American slicers are typically peeled before eating.

Pickling Cucumbers

The fruits of pickling cucumber varieties are smaller than those of slicing cucumbers, 3–5" in length. Pickling cucumbers are essential for canning, but they are also delicious eaten fresh because they are crisp and juicy. Their flesh should remain crisp and their skin should maintain its structure even after being pickled.

- **American pickling** cucumbers have fewer, larger spines and bumps than their European counterparts.
- **European pickling** cucumbers have many small spines. The European picklers are a popular choice for making baby gherkins and cornichons because they are nicely proportioned at a very small size.

Thin-skinned Cucumbers

The group of cucumber varieties loosely categorized as thin-skinned include the following 3 subtypes. Their fruits are predominantly seedless or their seed is diminished in number and size.

- **Dutch/European Type.** These approximately 14"-long, thin, spineless cucumbers are usually grown in a greenhouse setting. Like snacking cucumbers, their thin skin contributes to excellent eating quality but also causes quick dehydration. They are often found in supermarkets shrink-wrapped in plastic. A well-bred European type should have few seeds, and the seeds they do have will be very small in size.

A NOTE ABOUT BITTERNESS & BURPLESSNESS

When Asian cucumbers were first introduced in the United States, they were marketed as being "burpless." We generally avoid using this term in our variety descriptions because many other so-called burpless varieties have been introduced since then and because "burplessness" is a relative quality. Research suggests that the bitter compounds found in all cucurbits known as *cucurbitacins* may be the cause of indigestion in some individuals but also confer certain health benefits. If you're looking for burpless cucumbers, most varieties that are seedless and thin-skinned have lower levels of cucurbitacins than thicker-skinned types and are therefore less likely to cause digestive upset. You may also want to look for varieties described as bitter-free or nonbitter.

- **Beit Alpha.** Smaller than the European varieties, Beit Alpha cucumbers average about 5–8" in length. Their mild flavor and size make them an excellent choice for snacking cucumbers. Like the European cucumbers, they are thin-skinned and need to be protected from cucumber beetles and dehydration. For field production, be sure to select Beit Alpha varieties that have been specifically bred to endure outdoor conditions; their skin will be slightly thicker than the standard greenhouse varieties.
- **Asian.** These varieties are spiny, slender, and long — some up to 12" in length. They require trellising to keep their fruits long and straight. Their skin is generally thinner and less bitter than that of American slicers, but thick enough to discourage cucumber beetles and slow dehydration. Their flavor, crisp texture, and diminished seeds make them a desirable choice for gourmet markets.

Cocktail Cucumbers

Usually picked at 3–4" in length, cocktail cucumber varieties are regarded as some of the best for their flavor and crunchy texture. Their small size, thin skins, and lack of spines make them favorable for fresh eating as snacks. They are usually sold in bags or clamshells to prevent them from quickly dehydrating. Cocktail cucumber varieties are usually grown in the greenhouse in order to protect their thin skins.

Specialty Cucumbers

This is simply a catch-all for cucumbers that are exceptional, e.g., a different species, such as Striped Armenian (*Cucumis melo*), or a different genus and species, such as Mexican Sour Gherkin (*Melothria scabra*).