

# Bolting & Biennials . . .

One of the most confusing terms that new vegetable gardeners come across is ‘bolting’. Also known as ‘running to seed’ this is where a plant suddenly, often in a matter of a few days, starts to grow flower stems, simultaneously stopping all useful growth of the vegetable itself. It is not just a problem for people new to growing edible plants – experienced gardeners also have to manage this problem as I found out last week when several salad plants I have been carefully over-wintering in my greenhouse suddenly shot up central stems. Once the flower shoots form not only is growth slowed as the plants put all their energy into reproducing but they can rapidly become unusable in the kitchen as well. Lettuce, for example, becomes bitter tasting and the leaves are less tender once the plant has bolted. So what can be done to prevent it?

The first step towards managing this problem is to understand what causes it. We need to realize that to some extent gardening is all about working against nature’s natural tendencies. The whole life-cycle of salad crops like lettuce is geared to lead up to the production of seeds in order to perpetuate the species. Running to seed, or bolting, is a natural part of this life cycle. Ending up on a plate is not! The gardeners job, therefore, is to persuade the plant to put off flowering for as long as possible so that a good leafy crop can be obtained.

Although we usually think of bolting as being caused by a sudden warm spell, for many plants (particularly biennials) the trigger is actually the cold weather they experienced much earlier on. This ‘primes’ the plants to produce flower stems as soon as the weather warms up. The other important factor which affects many annuals is significant increases in day length. These extra light-hours trigger the plant to run to seed as summer approaches.

So what can be done to prevent this phenomenon, or at least put it off as long as possible? There are several helpful strategies:

- 1)** For annuals, the key is to not stress the plant. Poor growing conditions such as dry soil or lack of nutrients from compost do not help, so it is good to mix in some quality compost and keep the soil relatively moist. If a cold spell occurs, then some protection will be beneficial, such as covering with garden fleece or moving them inside a cold frame if they are still in pots.
- 2)** For other plants, selecting varieties which are known to resist bolting is the best option. A well-known example of this is ‘Boltardy’ beets and I have certainly never had this run to seed whenever I have grown it.
- 3)** Some plants just don’t do well sown in spring. Many salad brassicas fall into this category: Chinese cabbage (pak choi), mizuna and arugula are good examples which are all best sown in mid to late summer.
- 4)** Lettuces can be kept from bolting by regularly picking the outer leaves, keeping them from maturing properly. This ‘cut and come again’ approach to harvesting can extend the time they produce for up to 10 weeks.
- 5)** The most general advice, applicable across the board, is to make regular sowings of plants. Weather is by very nature always unpredictable, so sowing a few plants every two weeks or so will guarantee that some of them should do well, whilst still giving you some early harvests before they bolt

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Onion, leek, many *Brassica oleracea* crops (collards, kale, kohlrabi, Brussels sprouts, and most broccoli), turnip, rutabaga, chard, beet, celery, carrot, parsnip.

All biennials have their advantages and disadvantages. For example, carrot and beet are the easiest to overwinter but brassicas are the easiest to process (harvest and clean seed).

Younger plants store/overwinter the best. Kale that you planted in the spring will overwinter less reliably than kale that you planted in the fall. You want to replant the smaller, younger, fall-planted crop if possible, because only healthy plants will survive storage. When we are growing biennials for seed, we plant almost all first year (vegetative year) biennials as transplants in mid-August, giving us about eight weeks of good growing season before we begin to see frost. Celery, celeriac, and Brussels sprouts go in the ground 3-4 weeks earlier. Currently we only plant onion and leek in the spring. These crops require the most time in the field before overwintering.

Larger plants also require more space in storage. For root crops, like beets or turnips, no smaller than a golf ball- somewhere between there and a baseball is about right. Fibrous rooted crops like kale should be right around the size where a gardener would begin picking a few leaves off for their salads. Cabbage should just be starting to head up. Carrots and parsnips should have a small but sturdy root, maybe the size of your little finger.

Source: <http://blog.seedsavers.org/blog/saving-seeds-biennial-plants>

A **biennial plant** is a flowering plant that takes two years to complete its biological lifecycle.<sup>[1]</sup> <sup>[2]</sup> In the first year the plant grows leaves, stems, and roots (vegetative structures), then it enters a period of dormancy over the colder months. Usually the stem remains very short and the leaves are low to the ground, forming a rosette. Many biennials require a cold treatment, or vernalization, before they will flower. During the next spring or summer, the stem of the biennial plant elongates greatly, or "bolts". This typically makes biennial vegetables such as spinach, fennel and lettuce unusable as food.<sup>[3]</sup> The plant then flowers, producing fruits and seeds before it finally dies. There are far fewer biennials than either perennial plants or annual plants.

Under extreme climatic conditions, a biennial plant may complete its life cycle rapidly (e.g. three months instead of two years). This is quite common in vegetable or flower seedlings that were exposed to cold conditions, or vernalized, before they were planted in the ground. This behavior leads to many normally biennial plants being treated as annuals in some areas.

From a gardener's perspective, a plant's status as annual, biennial, or perennial often varies based on location or purpose. Biennials grown for flowers, fruits, or seeds need to be grown for two years. Biennials that are grown for edible leaves or roots are grown for just one year (and not grown on a second year to run to seed).

Source: [https://en.wikipedia.org/wiki/Biennial\\_plant](https://en.wikipedia.org/wiki/Biennial_plant)