

# Chapter FOUR FLOWERING





*Phyllotaxy - Branching changes when a seedling enters the flowering stage. The vegetative plant on the left has symmetrical branching. Branching changes to asymmetrical when plants enter the flowering growth stage.*

## Life Cycle

Cannabis must flower and produce seeds to successfully complete its annual life cycle. Marijuana is a dioecious plant, being either male (pollen producing) or female (ovule producing). However, hermaphrodite (bisexual) plants with both male and female flowers can also occur.



*Plants grown from seed support symmetrical branches during seedling and vegetative growth.*

In nature, cannabis flowers in the fall, after the long hot days of summer. The long nights and short days of autumn signal marijuana to start flowering. Plants are normally either male or female. Cannabis produces male or female pre-flowers after four weeks of vegetative growth. For more information, see "Pre-flowers," below.

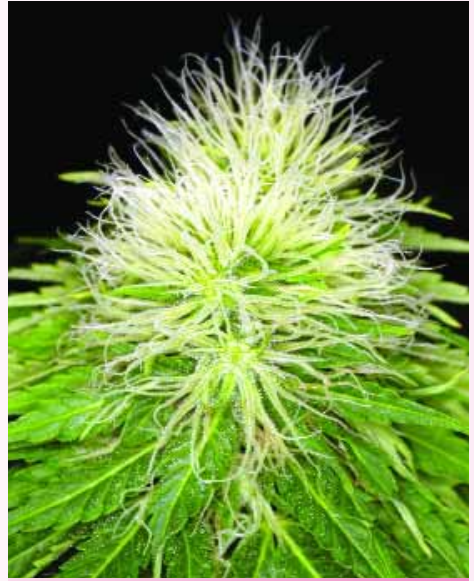
Growth patterns and chemistry change during flowering: stems elongate; leaves grow progressively fewer blades; cannabinoid production slows at first then accelerates; and flower formation is rapid at first then slows. Nutrient needs change as growth stages change. Plants



*Asymmetrical branching occurs as plants grown from seed begin to flower.*

focus on flower production rather than vegetative growth. Green chlorophyll production, requiring much nitrogen, slows. Phosphorus and potassium uptake increase to promote floral formation. Shortly before the flowering stage, growers change to a "super bloom" fertilizer formula with less nitrogen and more potassium and phosphorus.

Induce flowering in greenhouses, outdoors, and indoors by giving plants more hours of total darkness and fewer hours of light. Give cannabis 12 hours of uninterrupted darkness and 12 hours of light to induce visible signs of flowering in two weeks or less. This program is effective in all but the latest blooming pure *sativa* strains. Growers with a vegetative room illuminated 18-24 hours a day and a flowering room with 12-hour days and 12-hour nights, create environments that mimic the photoperiod in summer and fall. With this simple combination, growers crank



*The top of this bud from an unknown strain is a mass of white, fuzzy, hair-like pistils.*



*When a low-nitrogen super bloom fertilizer with more phosphorus and potassium is used, fan leaves yellow during flowering.*



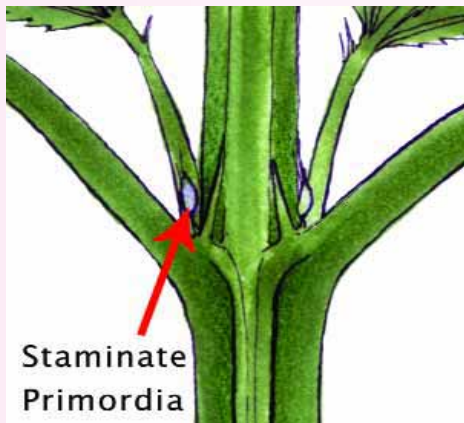
*This flowering male plant is in full bloom. Pollen-laden flowers continue to open and shed pollen for two weeks or longer.*



*Image shows a male plant after 24 days of vegetative growth at 18/6 day/night. Staminate flowers are located at the node between the stipule and emerging branch.*



*This is another view of the same pre-flowering male plant so you can get a better view.*



*The red arrow shows where pre-flowers develop on both male and female plants.*

out a crop of outstanding buds every six to ten weeks all year long.

Inducing flowering in cannabis grown from seed with a 12/12 day/night photoperiod will cause plants to show sex, male or female. Once the sex of the plant is guaranteed, males are almost always harvested before they shed pollen, and females are coaxed into higher yields. Once the photoperiod is set, disrupting it will cause plants to suffer stress. If they suffer enough stress, hermaphrodite tendencies increase.

Water intake of flowering plants is usually somewhat less than in the vegetative stage. Adequate water during flowering is important for plants to carry on internal chemistry and resin production. Withholding water to "stress" a plant will actually stunt growth and diminish yield.

Removing large fan leaves to allow more intense light to reach small buds or to stress plants is crazy! Large leaves are necessary to keep plants healthy. Indoors and in greenhouses where the hours of darkness are controlled, cannabis flowers for six to ten weeks or longer. This is a very short time. Hacking off branch tips to initiate more budding sites diffuses floral hormones and retards growth. Remove only leaves that are 50 percent or more damaged by diseases, pests, and cultural practices.

Upon pollination, one of the many, tiny grains of pollen from the male (staminate) flower pod, lands on a pistil of the female (pistillate) flower. Female flower tops are a mass of calyxes with each calyx harboring an ovule and a protruding set of pistils. Actual fertilization takes place when the grain of male pollen slides down the pistil and unites with the female ovule deep within the female calyx. Once fertilization takes place, pistils turn brown and a seed forms within the seed bract. Seeds are the result of this sexual propagation and contain genetic characteristics of both parents. In nature there is