



BEACON HEMP™

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Day Neutral Variety Cultivation Guide

Day Neutral

The Beacon Hemp line of day neutral, high CBD, industrial hemp varieties currently include four distinct cultivars; three inbred lines and three F1 hybrids.

Day neutral varieties initiate flowering 28-35 days following germination regardless of number of hours of uninterrupted darkness. All four of Beacon Hemp's day neutral varieties are typically ready to harvest, on average, in 12 weeks, depending on environmental conditions and cultural practices. Due to the limited duration of vegetative growth, day neutral hemp grows smaller (2.5'-4' in height and 2'-3' in diameter) and should be planted at higher densities compared to photoperiodic ("short-day") varieties. The smaller stature of day neutral hemp lends itself to mechanized harvest and drying solutions.

CURRENT DAY NEUTRAL VARIETIES INCLUDE:



Auto Tsunami™



Auto Pivot™



Auto Tune™



Auto Bahn™



Auto Blunami™



Auto Blues™

More information on each variety's unique characteristics can be found on their Variety Guide.

QUICK TIPS:

- **Do not allow seedlings to become root bound prior to transplant.** Doing so will reduce the long-term health and quality of the crop.
- **In favorable conditions seedlings are ready for transplant 10 days after sowing.** Plants grow fast so plan accordingly.
- **Harvesting early will ensure top flowers test under 0.3% THC.**

HEMP GROWTH STAGES :

- **Seedling** – Emergence occurs in 2-5 days. Takes approximately 5-10 days after sowing, to reach transplant size in a 98-128 cell propagation tray.
- **Transplant** – Seedling potted up or sown in field 5-10 days following sowing.
- **Vegetative** – Period of immature development prior to flower initiation and visible bud.
- **Visible Bud** – Occurs approximately 30 days following germination; when flower buds are first visible.
- **4 Weeks Prior to Harvest** – Typical timeframe for preharvest, compliance analysis is 7 to 9 weeks after germination.
- **Harvest** – 75 to 90 days after germination



PROPAGATION:

- In properly managed fields and container media direct sowing is an economical solution to the rapid transplantation that day neutral varieties require.
- If starting in a nursery choose a plug with media that holds its shape such as a Quick Plug®, Ellepot®, Oasis®, GrowCoon® or similar. Seedlings will have minimal root growth when ready to transplant, and roots will not be able to hold loose-fill media at the time of transplant.
- Sow seed in a 98-128 cell tray. Avoid over watering and extreme, prolonged dry downs.
- Start fertilizing at 25-50 ppm N when cotyledons have emerged.
- Seedlings are ready to transplant when first set of true leaves are emerging or have emerged. DO NOT allow seedlings to get too big prior to transplanting or this will stunt their growth potential. (Figure 1)



Figure 1. Maximum transplant size of day neutral (Autoflower) hemp. Plant shown has 2 sets of true leaves and should have been transplanted a few days prior with 1 set of true leaves.

GREENHOUSE CULTIVATION:

- **Media** – Seedlings should be transplanted into a well-draining media.
- **Irrigation** – Pulse irrigation with weekly leaching recommended, though it is acceptable to irrigate to container capacity and allow for thorough dry down.
- **Fertilization** – At transplant fertigate with a complete fertilizer at 100 ppm N. Approximately 5 days following transplantation increase to 150-200 ppm Nitrogen balanced with Potassium (1.6-2.0 mS/cm EC). After visible bud decrease N to 125-150 ppm and increase K to 175-225 ppm depending on environment and water quality. Calcium is needed for floral development. Periodically irrigate media with clear water to reduce salt content.
- **Light** – Transition from 250-300 $\mu\text{mol}/\text{m}^2/\text{s}$ to 500-600 $\mu\text{mol}/\text{m}^2/\text{s}$ over a course of 3-5 days to reduce transplant shock. Flower initiation and development is not affected by photoperiod (daylength) in day neutral hemp varieties. Increased daylength will provide additional time for photosynthesis and greater plant potential. Daylength is recommended at 12h-18h with a 30 DLI.
- **Planting Density** – 1-2 sq. ft. per plant in 1-2 gallon containers.

FIELD PRODUCTION:

- **Plant density** – Optimal plant density is dependent on bed width and weed control strategy; it is recommended to plant at a density no less than 10,000 plants per acre, which requires multiple lines when planting in beds 40" or wider.
- **Direct sowing** – Plant seed 1/4" to 3/8" into the soil. Overhead irrigate until plants are established. Irrigate properly to reduce pathogen incidence. Switch to drip tape or flood irrigation after plants are at the 2-4 true leaf stage
- **Transplant** – Automated transplanters can be used if they are able to handle small and delicate seedlings.
- **Start plants** – with a higher N early in the crop cycle. Fertilize with additional Calcium at visible to 1" size buds if soils are deficient or higher in alkalinity. Additional Potassium is recommended in areas of high transpiration and low soil K.

THC TESTING / HARVEST INDEX:

- If testing for THC content 4 weeks prior to harvest flowers will likely be 1" in diameter (Figure 2).
- Signs plants are at maximum cannabinoid accumulation are when trichomes become milky and 50% of stigmas are brown; however, it is the grower's responsibility to ensure THC content is still below 0.3% THC at this stage.



Figure 2. Typical flower size at 4 weeks prior to harvest.

HARVESTING:

- Several methods of harvesting, drying and processing can be used. It is up to the farmer to determine the best method for their operation.

PEST / PATHOGENS

- Scouting of common, and regionally specific, pests and pathogens of hemp should be conducted regularly.
- Common pests include aphids, thrips, mites, whiteflies, caterpillars and cucumber beetles.
- Common pathogens include *Pythium*, *Phytophthora sp.*, during the young plant stage. Powdery mildew (*Sphaerotheca macularis* and *Leveillula taurica*), *Botrytis cinerea*, *Fusarium spp.*, *Verticillium spp.*, *Sclerotinia sclerotiorum*, among other pathogens.