



Basil is very profitable and in high demand year-round from Asian markets and other outlets. Easily grown indoors under lights, this hydroponics setup has an air-cooled lighting system and good overall ventilation.



These seedlings are in the early stages of vegetative growth.

Introduction

The seedling growth stage lasts for about two to three weeks after seeds have germinated. Once a strong root system is established and foliage growth increases rapidly, seedlings enter the vegetative growth stage. When chlorophyll production is full speed ahead, a vegetative plant will produce as much green, leafy foliage as it is genetically possible to manufacture as long as light, CO₂, nutrients, and water are not limited. Properly maintained, some plants will grow from one-half to two inches per day. A plant stunted now could take weeks to resume normal growth. A strong, unrestricted root system is essential to supply much-needed water and nutrients. Unrestricted vegetative growth is the key to a healthy harvest. A plant's nutrient and water intake changes during vegetative growth. Transpiration is carried on at a more rapid rate, requiring more water. High levels of nitrogen are needed; potassium, phosphorus, calcium, magnesium, sulfur, and trace elements are used at much faster rates. The larger a plant gets and the bigger the root system, the faster the soil will dry out. The key to strong vegetative growth and a heavy harvest is supplying roots and plants with the perfect environment.

Vegetative growth is maintained with 16 or more hours of light. I used to believe a point of diminishing returns was reached after 18 hours of light, but further research shows that vegetative plants grow faster under 24 hours of light. Many plants will continue vegetative growth a year or longer (theoretically forever), as long as an 18-hour photoperiod is maintained.



These cuttings share all genetic characteristics. They will all grow up to look like their mothers.

Most warm-season annuals are photoperiodic-reactive; flowering can be controlled with the light and dark cycle. This allows indoor horticulturists to control vegetative and flowering growth.

Taking cuttings, transplanting, pruning, and bending are all initiated when plants are in the vegetative growth stage.

Cuttings and Taking Cuttings

Plants can be reproduced (propagated) sexually or asexually. Seeds are the product of sexual propagation; cuttings are the result of asexual or vegetative propagation. In its simplest form, taking a cutting involves cutting a growing branch tip and rooting it. Technically, taking cuttings is taking one cell of a plant

and promoting its growth into a plant. Gardeners and horticulturists commonly refer to a cutting as meaning a branch of a plant that has been cut off and rooted.

| Growth Stage | Time | Number of plants |
|--------------|---------|------------------|
| Clone | 3 weeks | 30 |
| Vegetative | 2 weeks | 10 |
| Flower | 8 weeks | 30 |
| Total | | 70 |

Taking cuttings reduces the time it takes for a crop such as basil or tarragon to mature. Productive gardeners have two rooms, a vegetative/taking cuttings room, about a quarter the size of a second room used for flowering. Smaller vegetative plants take up less space than older flowering plants. For example, a 250- or 400-watt metal halide could easily illuminate vegetative plants and cuttings that would fill a flowering room lit by three 600-watt HP sodiums. If the halide is turned off, fluorescent and compact fluorescent lamps are more economical and work well to root cuttings.

Combine eight-week flowering/harvest cycles with the continuous taking of cuttings to form a perpetual harvest. One easy-to-implement scenario is to take two cuttings every four days, and harvest a plant or cut it back every other day. Every time a plant is harvested, one or two rooted cuttings are moved from the vegetative room into the flowering room.

Short crops of cuttings in small containers are much easier to move and maintain than big plants in big containers. Short cuttings are also easy and efficient to grow in greenhouses and outdoors.

Well-illuminated, strong cuttings grow fast and have less chance of being affected

Annuals and Herbaceous Perennials that propagate easily by cloning:

African violets

Aloes

Alyssum (Goldentuft)

Anthuriums

Anemones (Poppy Anemone)

Begonias (certain types only)

Bird of Paradise

Cactuses

Chrysanthemums

Crassula Argentia (Jade Plant)

Dahlias

Carnations

Ficuses

Geraniums

Heliconias

Hyacinths

Irises

Lavender

Lobelia

Orchids

Phlox

Primroses

Sage

Sansevieria (Snakeplant)

Strawberry Geraniums

Scheffleras

Succulents including Agave,

ALoe, Crassula, Echevaria, Hoya,

Kalanchoe, Portulacaria, Yuccas)

Thyme

Tulips

Vincas

Source: "Plant Propagation Principles and Practices" Hartmann and Kester 4th Edition, Prentice-Hall, Inc. publisher.



Cuttings from lower branches root the easiest because they contain more of the proper hormones.