High Yield Hints - PHOTOMORPHOGENESIS AND FLOWERING

Photomorphogenesis refers to the effect of light to the development and metabolism of plants.

Phytochrome It is the pigment that absorbs **red and far – red light** and also absorbs blue light Phytochromes play a key role in light regulated plant growth and development. In dark grown or Etiolated plants, Phytochrome is in the red absorbing form called **Pr form** . It is synthesized in Pr form.
Pr appears as blue to human eye and is converted into **Pfr,** (blue) a far red Absorbing form by red light.
Pfr is the physiologically active form of Phytochrome.
Phytochromobilin is the open chain tetrapyrole of Phytochrome.
Phytochrome is a dimeric protein.

Garnar and Allard in 1920 found that flowering in plants is related to day length.

PHOTOPERIODISM

Short day plants – SDPs Flower in day length less than critical amount. Egs. ***Nicotiana, Glycine Max, Xanthium, Chrysanthimum, Dahlia.***

Long day plants – LDPs Flower when day length exceeds the critical level. Egs. ***Spinach, Radish, Beet, Wheat.***

Day neutral plants – DNPs . not affected by photoperiod. Egs. ***Cotton, Sunflower, Tomato,*** Maize.

Short-Long day plants – SLDP –Require short photoperiod for bud initiation and long photoperiod For blossoming. ***Egs. Trifolium repens, Secale cereale***.

Long- Short day plants – LSDPs Flower only when long photoperiod is followed by short Photoperiod. Egs. ***Bryophyllum, Cestrum***.

Flowering is controlled by Dark period rather than light period.

Short day plants flowers when critical dark period is exceeded. That is **SDPs are Night Long plants**.
In Long day plants Dark period is less. That is **LDPs is short night plants**

Leaves receives the stimuli and transmits through the *Phloem*

Defoliated plants **do not flower because they cannot receive the stimuli.**

The most effective wave length is between *580nm and 680nm* in the red region

Green color will not induce flowering.

amonkumar.wordpress.com