

Photoperiodism

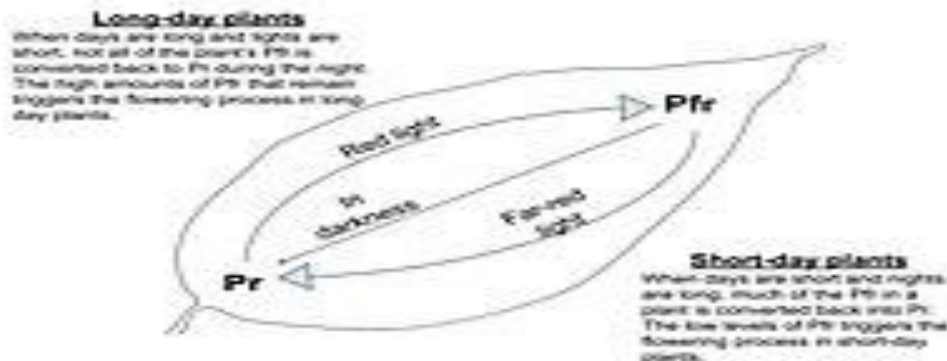
Photoperiodism

- Photoperiodism is the physiological reaction of organisms to the length of night or a dark period.
- It occurs in plants, animals as well as fruiting. Photoperiodism can also be defined as the developmental responses of plants to the relative lengths of light and dark periods.
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Classification

- They are classified under three groups according to the photoperiods:
 1. Long day plant
 2. Short day plant
 3. Day neutral plant

Cycle of phytochrome in leaves of plants



Long-day plants

- Long-day plants require less darkness to generate the reaction needed for production.
- These plants need about eight hours of darkness to start flowering.
- The long-day flowers that grow well in the home garden are lettuce (*Lactuca sativa*), spinach (*Spinacia oleracea*) and petunias (*Petunia x hybrida*). Lettuce is classified as a long-day plant because it is during the long days of summer that the plant flowers, or bolts.
- A characteristic of some long-day plants, such as potatoes (*Solanum tuberosum*), is the formation of bulbs and tubers.

Short-day plants

- Short-day plants are those plants that flower when they are exposed to long periods of darkness and short periods of light.
- For a short-day plant to bloom, there must be less than 12 hours of daylight.
- The plants that bloom in the spring or later in the fall are considered short-day plants.
- Kalanchoe (*Kalanchoe* spp.) and Salvia (*Salvia* spp.) are two short-day plants that require at least 12 hours of darkness to bloom in the garden. Green onions (*Allium cepa* L.) and soybean (*Glycine max*) are two common short-day vegetables.
- There are short-day varieties of strawberries, such as *Fragaria ananassa* 'Camarosa' and other fruits, as well.

Day-neutral plants

- Day-neutral plants do not depend upon the amount of darkness or daylight hours.
- These plants respond to the aging process. As the plant matures, the flower blooms or the plant flowers and sets fruit.
- Sunflowers (*Helianthus annuus*) and peas (*Pisum sativum*) are considered day-neutral.
- Another popular plant that is day-neutral is the tomato plant (*Lycopersicon esculentum*).