

B.Sc. II Semester

Paper: BBT 2002

Unit IV

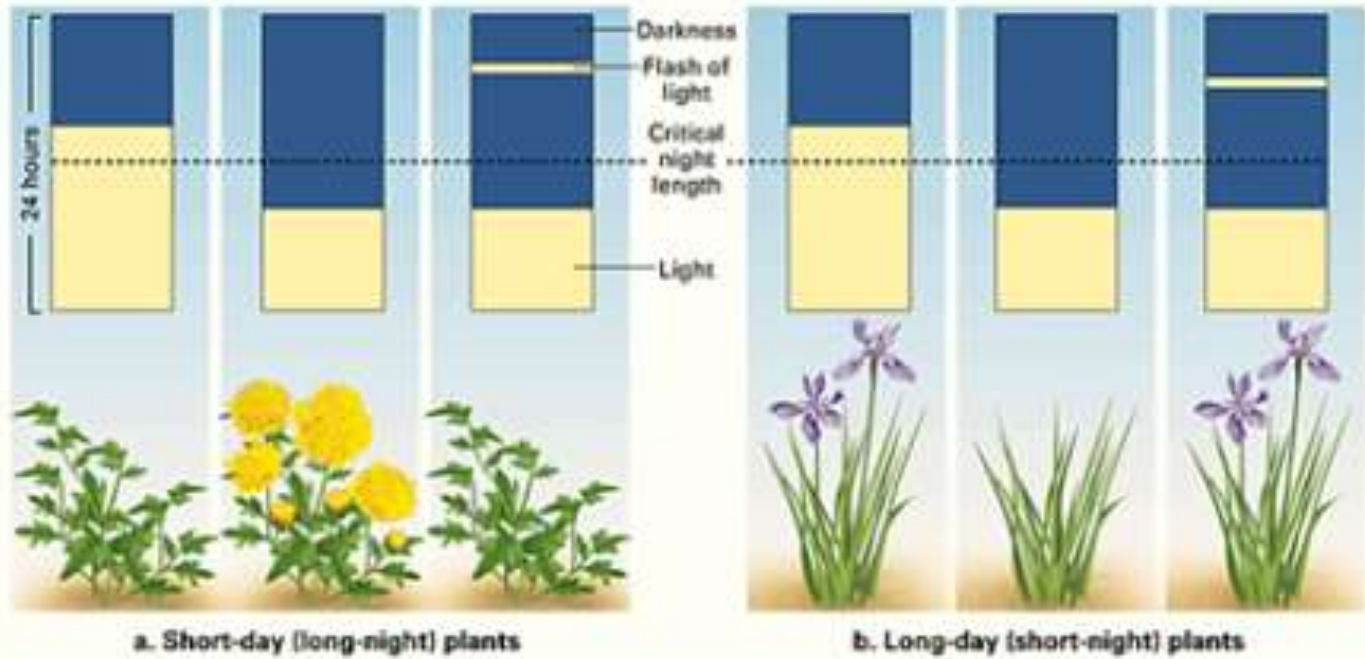
Source: Open Access

Dr. Madhulika Singh

Photoperiodism

Effect or requirement of the relative length of day and night on flowering is called Photoperiodism.”

The term Photoperiod has been derived from the word ‘Photo’ means ‘light’ and ‘period’ means ‘length of time’. Photoperiodism is the typical movement in plants under the influence of the availability of light to induce flowering. Plants respond to light, both intensity and quality, to convert from vegetative to flowering.



Photoperiodism Plant Types

Depending on the light requirement, plants can be divided into the following categories:

Short Day Plants

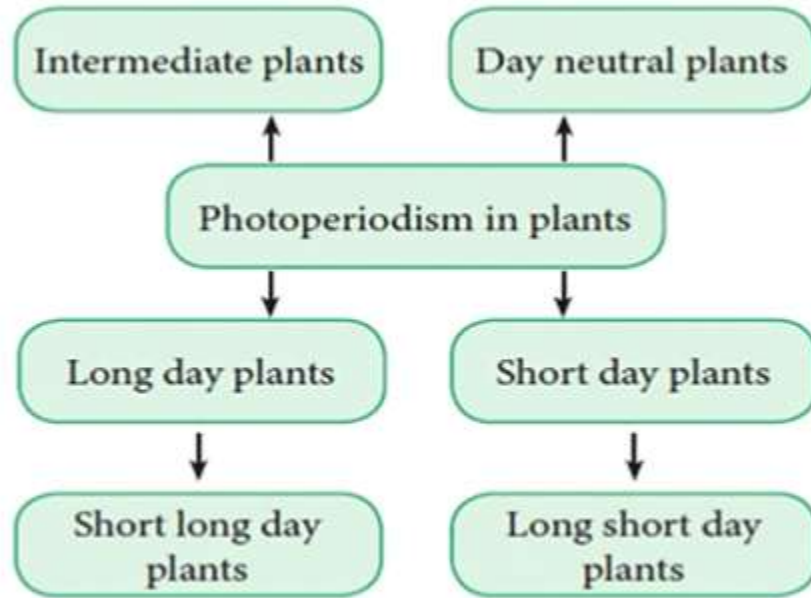
Long Day Plants

Day Neutral Plants

Intermediate Plants

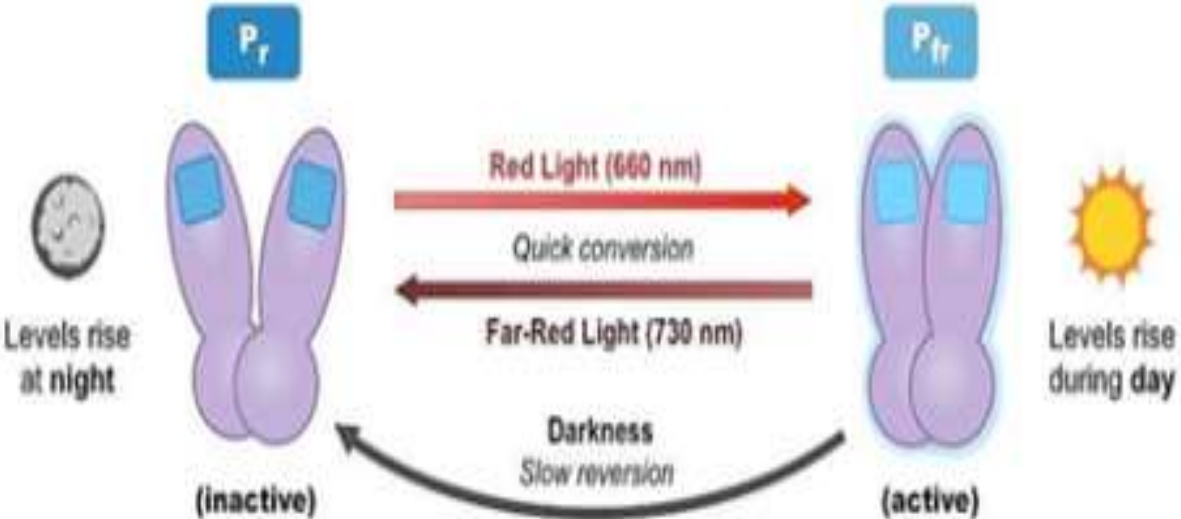
Short – Long Day Plants

Long – Short Day Plants



Role of Phytochrome in Photoperiodism

Phytochrome is a blue-green pigment that acts as a photoreceptor and helps in photoperiodic induction. Phytochromes exist in two forms: active form (Pfr)(Pfr) and inactive form (Pr).(Pr). The PrPr absorbs red light (660nm),(660nm), and PfrPfr absorbs far-red light (730nm).(730nm). During the daytime, two forms PrPr and PfrPfr interchange till they reach an equilibrium. The PfrPfr is the biologically active form. It is predominant during the day as more red light is present. The PfrPfr acts as the switch that turns on flowering or seed germination. The PfrPfr breaks down into the PrPr by absorbing far-red light. The response is determined by the length of the night period. In the absence of light, the PrPr will gradually convert to Pr.Pr. So during the night, the PrPr form is predominant. The inactive PrPr is converted into active PfrPfr by absorbing red light.



Thankyou