

## Growth habit and development stages

Days to emergence, flowering and maturity should be noted in a field plot when 50% of the plants in the plot have reached a particular stage of development.

Table 1. Growth habit classifications and descriptions of common bean.

Growth habit	Description
Type I	Determinate growth habit Terminal bud reproductive Stems and branches erect or prostrate Terminal guide absent Pods distributed along the length of the stem
Type II	Indeterminate growth habit Terminal bud vegetative Stems and branches erect Terminal guide absent or medium Pods distributed along the length of the stem
Type III	Indeterminate growth habit Terminal bud vegetative Stems and branches prostrate with little or no climbing ability Terminal guide small or long Pods distributed mainly in the basal portion
Type IV	Indeterminate growth habit Terminal bud vegetative Stems and branches twining with strong climbing ability Terminal guide long or very long Pods distributed along the length of the stem or mainly in the upper portion

Source: Singh (1982); Hall (1991).

Table 2. Development stages of the common bean.

Stage	Description
V1	<i>Emergence</i> : from the appearance of cotyledons on the soils surface to the unfolding of primary leaves
V2	<i>Primary leaves</i> : from the full unfolding of the primary leaves to the unfolding of the first trifoliate leaf
V3	<i>First trifoliate leaf</i> : from the full unfolding of the first trifoliate leaf to the unfolding of the third trifoliate leaf
V4	<i>Third trifoliate leaf</i> : from the full unfolding of the third trifoliate to the appearance of the first floral bud or raceme
R5	<i>Preflowering</i> : from the appearance of the first floral bud or raceme to the opening
R6	<i>Flowering</i> : from the opening of the first flower to the expansion of the ovary after fertilization
R7	<i>Pod development</i> : from the expansion of the ovary to the elongation of the pod to its full size before increase in seed weight
R8	<i>Pod filling</i> : from the beginning of seed weight and size increase to the development of pigmentation of seeds and onset of leaf senescence
R9	Harvest maturity: <i>from initiation of senescence to complete senescence and drop in seed moisture to about 15%</i>

Source: Hall (1991).

#### References

Hall, R. 1991. The bean plant. p. 1-5 *In* R. Hall (ed). Compendium of bean diseases. APS Press. Saint Paul, Minnesota.

Singh, S.P. 1982. A key for identification of different growth habits of *Phaseolus vulgaris* L. Annu. Rept. Bean Improv. Coop. 25: 92-94.

Additional information concerning growth habit can be found at the following CIAT web site: [www.ciat.cgiar.org/beans/growthhabits.htm](http://www.ciat.cgiar.org/beans/growthhabits.htm)