A1145

Stages of Sunflower Development

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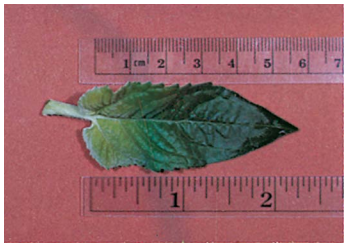
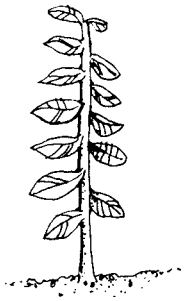
Vegetative Stages



True leaf — 4 cm



V-12

V-E

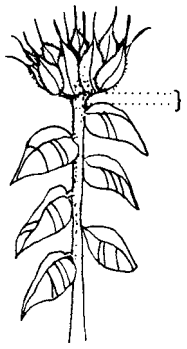
V-2

V-4

Reproductive Stages

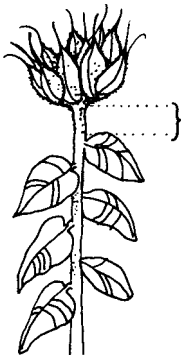
R-1

R-2



Less than 2 cm

R-2



More than 2 cm

R-3

R-3

R-3 Top View

R-4 Top View

R-5.1

R-5.5

R-5.9

R-6

R-7

R-8

R-9

NDSU EXTENSION SERVICE
North Dakota State University
Fargo, North Dakota

Reviewed and reprinted May 2013

Description of sunflower growth stages

The total time required for development of a sunflower plant and the time between the various stages of development depends on the genetic background of the plant and the growing environment. When determining the growth stage of a sunflower field, the average development of a large number of plants should be considered. This staging method also can be used for individual plants. The same system can be used for classifying a single head or branched sunflower. In the case of branched sunflower, make determinations using only the main branch or head. In stages R7 through R9, use healthy, disease-free heads to determine plant development if possible because some diseases can cause head discoloration.

	Stage	Description
Vegetative Emergence	VE	Seedling has emerged and the first leaf beyond the cotyledons is less than 4 cm long.
Vegetative Stages	V (number) (i.e.) V1 V2 V3 etc.,	These are determined by counting the number of true leaves at least 4 cm in length beginning as V1, V2, V3, V4, etc. If senescence of the lower leaves has occurred, count leaf scars (excluding those where the cotyledons were attached) to determine proper stage.
Reproductive Stages	R1	The terminal bud forms a miniature floral head rather than a cluster of leaves. When viewed from directly above, the immature bracts form a many-pointed starlike appearance.
	R2	The immature bud elongates 0.5 to 2 cm above the nearest leaf attached to the stem. Disregard leaves attached directly to the back of the bud.
	R3	The immature bud elongates more than 2 cm above the nearest leaf.
	R4	The inflorescence begins to open. When viewed from directly above, immature ray flowers are visible.
	R5 (decimal) (i.e.) R5.1 R5.2 R5.3 etc.	This stage is the beginning of flowering. The stage can be divided into substages dependent upon the percent of the head area (disk flowers) that has completed or is in flowering. Ex. R5.3 (30%), R5.8 (80%) etc.
	R6	Flowering is complete and the ray flowers are wilting.
	R7	The back of the head has started to turn pale yellow.
	R8	the back of the head is yellow but the bracts remain green.
	R9	The bracts become yellow and brown. This stage is regarded as physiological maturity.

From Schneiter, A.A., and J.F. Miller. 1981. Description of Sunflower Growth Stages. Crop Sci. 21:901-903.

For more information on this and other topics, see www.ag.ndsu.edu

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