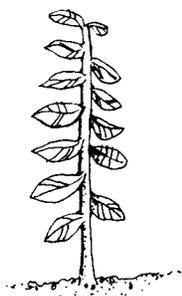


### Vegetative Stages



True leaf — 4 cm



V-12



V-E



V-2



V-4

# Stages of Sunflower Development

Reviewed by

Hans Kandel, Extension Agronomist

Authors

A.A. Schneiter, former NDSU professor

J.F. Miller, former USDA-ARS

D.R. Berglund, emeritus NDSU extension agronomist

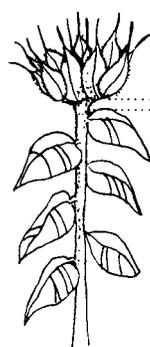
### Reproductive Stages



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
<b>Vegetative Emergence</b> VE	Seedling has emerged and the first leaf beyond the cotyledons is less than 4 cm long.
<b>Vegetative Stages</b>	
V (number)	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.
(i.e.) V1	
V2	
V3	
etc.,	
<b>Reproductive Stages</b>	
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)	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.
(i.e.) R5.1	
R5.2	
R5.3	
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.

The NDSU Extension Service does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names. NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit [www.ag.ndsu.edu/agcomm/creative-commons](http://www.ag.ndsu.edu/agcomm/creative-commons).

## For more information on this and other topics, see [www.ag.ndsu.edu](http://www.ag.ndsu.edu)

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. North Dakota State University does not discriminate on the basis of age, color, disability, gender expression/identity, genetic information, marital status, national origin, public assistance status, race, religion, sex, sexual orientation, or status as a U.S. veteran. Direct inquiries to the Vice President for Equity, Diversity and Global Outreach, 205 Old Main, (701) 231-7708. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881.

2M-2-98, 1.5M-4-05, 300-5-13