NC STATE EXTENSION

Barbara Shew
Department of Entomology and Plant Pathology

Peanut Leaf spot advisories

The North Carolina peanut leaf spot advisory is a cooperative effort by the State Climate Office of North Carolina and the Department of Entomology and Plant Pathology at NC State University. The advisory is a safe way to minimize fungicide applications by spraying only when weather conditions favor disease.

July 10, 2020 PEANUT LEAF SPOT ADVISORY FOR ROCK
Upper Coastal Plain Res Stn (Rocky Mount, NC)
setDate = 2020-07-06 07:00:00
lethal conditions = false
favorable hours = 59
LESD = 2020-06-26
ROCK Advisory: spray today
Growing degree days (base 56) since LESD = 354.2
Growing degree days (base 56) since May 1 = 1111
Records count: 96 out of 97
Most recent db ob to 8am EDT: 2020-07-10 07:00:00

In well-rotated fields, **the first fungicide spray should be applied by the very early pod stage (R3)**, **but no later than July 10.** After the first spray, apply fungicides according to the leaf spot advisory.

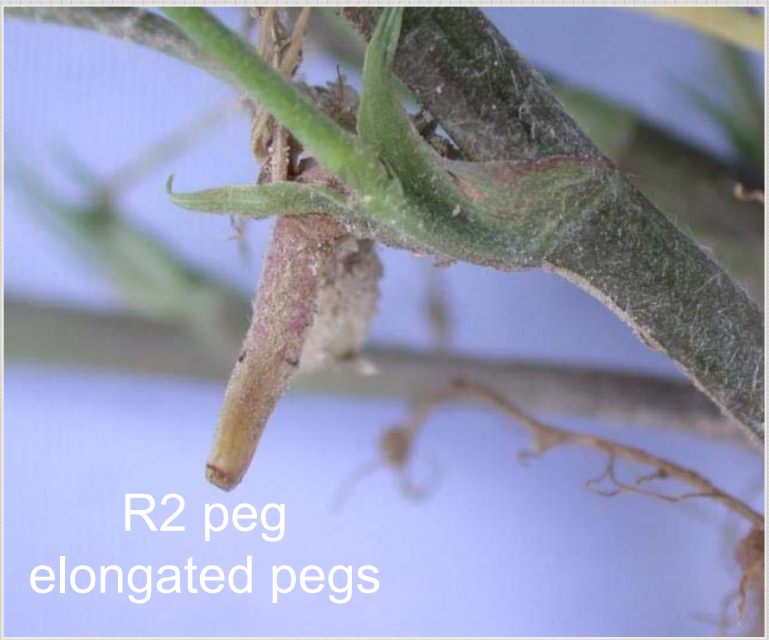
Each day's advisory: "spray today" or "do not spray today" can be found on the 7th line for each location. A spray should be applied if it has been 14 days or more since the last spray.

Advisory information:
lines 1 & 2 – Date, name location of station. ECONET stations are indicated by an abbreviated name; airport stations are indicated by call letters. Check advisories the two stations nearest you.
line 3 – Set date. This is used to calculate the advisory.
line 4 – Lethal conditions. A temperature of 99°F or higher for 5 straight hours OR humidity less than 40% for 8 straight hours will kill the pathogen. If lethal conditions = true, favorable hours (below) are reset to 0.
line 5 - Favorable hours. An hour is favorable for leaf spot development when the humidity is at least 95% and temperature is between 61°F and 90°F during that hour. A spray is advised when there have been at least 48 favorable hours since the set date.
line 6 – LESD (Last Effective Spray Date). A fungicide spray is assumed to protect for 14 days. **You do not need to spray if you have sprayed since the LESD even when the advisory says "spray today."**
In this example: LESD = 2020-06-26 means you need to spray today if your last spray was applied **before** June 26, 2020.
line 7 – Today's advisory. If the advisory is **"spray today"** conditions are favorable for leaf spot and you should spray if no fungicide has been applied in the past 14 days. If the advisory is "do not spray today" a spray is not required.
lines 8 & 9 - Growing degree days for peanuts (base 56) since the LESD and since May 1.
line 10 – Records count. The number of hourly weather observations out of the total possible observations. **The advisory may not be reliable if there are several missing records.**
line 11 – Most recent hourly observation. This should be 7:00:00 (7 a.m.) on the date of the advisory.

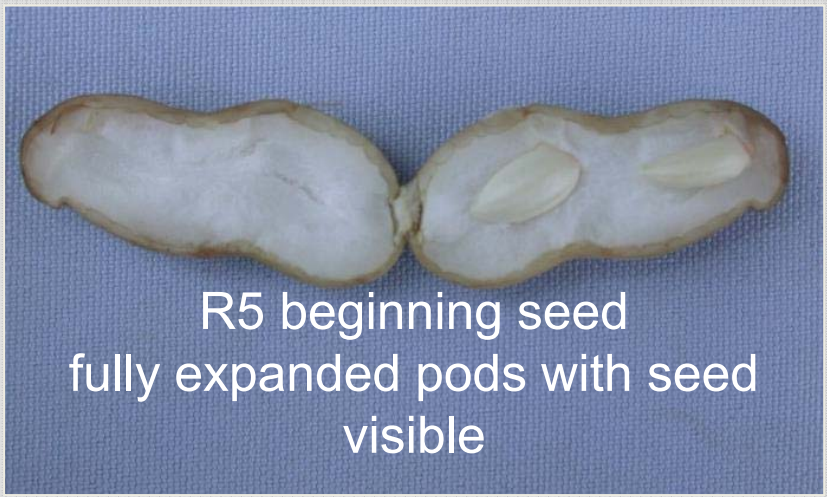
Peanut reproductive stages

Begin leaf spot sprays no later than R3 (around 50 DAP)


R1 flowering
open flowers


R2 peg
elongated pegs


R3 very early pod
pegs in soil with swollen tip


R5 beginning seed
fully expanded pods with seed visible

NC STATE EXTENSION

Barbara Shew
Department of Entomology and Plant Pathology

Peanut disease control calendar and objectives

Approx. Date	July 5	July 19	Aug 2	Aug 16	Aug 30	Sep 13
Approx. DAP	45 - 50	60 - 65	75 - 80	90 - 95	105 - 110	120 - 125 (see advisory)
Objective	Leaf spot control, curative activity, and resistance management	Leaf spot and stem rot control	Leaf spot and stem rot control	Leaf spot and stem rot control, curative activity; Sclerotinia blight suppression	Leaf spot control and resistance management if last planned spray	Leaf spot control and resistance management
Objective	All sprays: alternate fungicide groups to prevent resistance development					
Critical periods for control						
Leaf spot	**5 or 6 sprays total needed for control unless advisories indicate otherwise**					
Stem rot		**Midseason: 1 to 3 sprays total needed for control**				
Sclerotinia blight			**Mid to late season: 1 to 3 sprays needed for control Follow advisories to determine critical times**			

Dates are approximate. Dates can be earlier for early planted peanut and/or peanut planted in North Carolina's southern counties.

Assumes a good rotation and a history of normal disease pressure

- Start no later than **R3 (approx. 50 DAP) or July 10, whichever comes first**
- After the first spray, stay on a 14-day schedule or use advisory

See Peanut Information for help in selecting fungicides

Barbara Shew
Dept. Entomology and Plant Pathology

How to Use the Sclerotinia Advisory

Sclerotinia advisories account for conditions favorable for Sclerotinia blight. They do not account for field history. **Fields with no history of disease do not need to be sprayed** unless a new outbreak is confirmed.

There are two advisories for each location (highlighted below).
Use the advisory for **row index = 2 if rows are within 6" of touching**
Use the advisory for **row index = 3 if rows are touching**
Sprays normally are not needed if rows are more than 6" apart

The Sclerotinia advisory looks at environment over the last five days to calculate the risk of Sclerotinia development. Below is an example of the advisory output for one location.

July 10, 2020 PEANUT SCLEROTINIA ADVISORY FOR LEWS
Peanut Belt Research Station (Lewiston, NC)
For 2020-07-05: MI=1, TI=1, EI=1
MI from 5-day rain
For 2020-07-06: MI=1, TI=1, EI=1
MI from 10-day rain
For 2020-07-07: MI=1, TI=1, EI=1
MI from RH, MI from 10-day rain
For 2020-07-08: MI=1, TI=2, EI=2
MI from RH, MI from 5-day rain, MI from 10-day rain
For 2020-07-09: MI=1, TI=1, EI=1
MI from RH, MI from 5-day rain, MI from 10-day rain
Row Index = 2 (rows within 6" of closing)
setDate = 2020-07-02 07:00:00
Five Day Index = 36
Last Effective Spray Date = 2020-06-19
Advisory: spray today
Disease level: MODERATE
Growing degree days (base 56) since LESD = 490.3
Growing degree days (base 56) since May 1 = 1089.3
Records count: 192 out of 193
Most recent db ob to 8am EDT: 2020-07-10 07:00:00

July 10, 2020 PEANUT SCLEROTINIA ADVISORY FOR LEWS
Peanut Belt Research Station (Lewiston, NC)
For 2020-07-05: MI=1, TI=1, EI=1
MI from 5-day rain
For 2020-07-06: MI=1, TI=1, EI=1
MI from 10-day rain
For 2020-07-07: MI=1, TI=1, EI=1
MI from RH, MI from 10-day rain
For 2020-07-08: MI=1, TI=2, EI=2
MI from RH, MI from 5-day rain, MI from 10-day rain
For 2020-07-09: MI=1, TI=1, EI=1
MI from RH, MI from 5-day rain, MI from 10-day rain
Row Index = 3 (rows closed)
setDate = 2020-07-02 07:00:00
Five Day Index = 54
Last Effective Spray Date = 2020-06-19
Advisory: spray today
Disease level: HIGH
Growing degree days (base 56) since LESD = 490.3
Growing degree days (base 56) since May 1 = 1089.3
Records count: 192 out of 193
Most recent db ob to 8am EDT: 2020-07-10 07:00:00

Details: Three Sclerotinia index values shown for the last five days: Moisture Index (MI), Temperature Index (TI), and Environmental Index (EI)

Moisture index (MI)
MI = 1 moisture is favorable for disease. MI = 0 moisture is not favorable for disease.
Moisture = 1 on a given day if:
- Relative humidity (RH) was 95% or higher for at least 8 consecutive hours; or
- Location received one-half inch of rain in the past 5 days; or
- Location received 1 inch of rain in the last 10 days.

Moisture = 0 otherwise
If your rainfall history is different, the advisory may not apply to you

Temperature index (TI) The risk of Sclerotinia blight is highest at temperatures below 72°F. Risk decreases as temperatures increase:
- TI = 0 if the day's 24-hour average temperature was more than 82°F
- TI = 1 if 77 to 82°F
- TI = 2 if 72 to 77°F
- TI = 3 if 72°F or lower

NC STATE
EXTENSION

Barbara Shew
Dept. Entomology and Plant Pathology

Environmental index (EI) has a daily value between 0 and 3
EI = MI * TI

Each day also has a Row index (highlighted) based on canopy width:
Row index = 2 for rows within 6" of touching
Row index = 3 for rows touching

A daily index (not shown in the advisory) then is calculated
Daily index = Environmental Index * Row Index *3
Values range from 0 to 27

Five-day index = Adds up the 5 most recent daily index values. A spray is advised if the total is more than 32.

Last effective spray date (LESD) – A spray is assumed to be effective for 21 days. **You do not need to spray if you have sprayed since the LESD.**

Advisory – if the advisory is "**spray today**" conditions are favorable for Sclerotinia blight. A spray could be necessary if a Sclerotinia fungicide has not been applied in the last 21 days. If the advisory is "**do not spray today**" a spray is not required.

Disease level - the five-day index is used to rate the disease hazard as LOW (<32), MODERATE (32-47), HIGH (48-98), or VERY HIGH (≥99).

Growing degree days - for peanuts (base 56) since the LESD and since May 1.

Records count - number of hourly weather observations out of total possible observations. The advisory may not be reliable if there are several missing records.

Most recent hourly observation – should be 7:00:00 (7 a.m.) on today's date.