

NC STATE

Determining Peanut Pod Maturity and Estimating the Optimal Digging Date

EXTENSION

Using the Peanut Profile Board

Gather 150 harvestable pods from each field or from each variety within a field, collecting pods from four or five locations. Keep pods in water until pod blasting. Use a pressure washer equipped with a turbo nozzle to remove the outer hull and expose the mesocarp color layer. Your county Extension agent can assist with this procedure.

Using the images of pods at the top of each column, place pods on the profile board under the appropriate mesocarp color category. Lay pods loosely as shown here.

Placing Peanut Pods on the Profile Board Color Category

Lay pods on the chart and place them loosely within the appropriate mesocarp color category from the bottom line of the category upward. The percentage value on the right-hand side of the chart can be used to compare percentages of pods among color categories. In most cases samples will resemble a bell-shaped curve. However, this occurs only when rainfall and temperatures promote predictable maturation. When weather conditions are unfavorable or when peanuts are damaged by pesticides, samples may not be uniformly distributed. This makes predicting the optimum digging date more difficult.

Use the percentage value on the right-hand side of the chart to determine if peanuts are at optimum maturity. When the percentages of both brown and black pods are at least 30 to 35%, peanuts are at optimum maturity.

The darker the mesocarp color, the more mature the peanut pod. Darker pods are heavier, will shrink less and will grade better than pods with a lighter mesocarp color.

Peanuts in the image below placed on a peanut profile board will reach optimum maturity in 10 to 14 days.

Sampling two or three times during the fall gives the best indication of the rate of peanut maturity. This is particularly important when examining pods that are black. These pods will eventually be lost and sampling only once does not give you enough information to determine when pods in the black category are likely to be lost. Using heat unit accumulations also can help you know when to begin determining maturity.

Note that when early morning temperatures are in high 40° F range for two days, pod maturation may not develop further unless there is a prolonged and unseasonal warming period.

Maximum Weight

30%

50%

75%

95%

100%

At least 35 days to black pod color

21 to 24 days to black pod color

14 to 17 days to black pod color

7 days to black pod color

Black pods can shed within 4 to 7 days after becoming black

45

40

35

30

25

20

15

10

5

Percentage of a sample that contains 150 pods

Change in severity of leaf spot in the peanut canopy (percent of leaves with visible lesions) and canopy defoliation (percent of leaves that have fallen).

100

90

80

70

60

50

40

30

20

10

0

-21

-14

-7

0

7

14

21

Days relative to when a reduction in pod yield is expected. A yield reduction often occurs at leaf spot incidence and defoliation levels presented at day 0.

— Percent of leaves with visible lesions — Percent of leaves that have fallen from the canopy

Fungicide sprays are no longer effective after 20% of leaves have visible lesions.

Measurable yield loss begins to occur when 40% leaf defoliation is observed.

SMK

Optimum maturity now

Optimum maturity in 10 to 14 days

Optimum maturity in 20 to 24 days

Harvestable

Optimum pod yield, percentage of total sound mature kernels, and percentage of extra large kernels relative to digging date.

100

80

60

40

20

0

-21

-14

-7

0

7

14

21

Days relative to when pod yield is at 100% of maximum yield. Day 0 is when peanuts are at optimum maturity in order to realize the greatest financial return.

— Pod yield (% of maximum) — Total sound mature kernels (%) — Extra large kernels (%)

Influence of Disease on Digging Decision

Disease can dramatically affect the pod shed and subsequent yield loss. However, most research suggests that extremely high levels of disease are needed to justify early digging. Peg strength and time required to reach optimum maturity will also influence this decision. Early digging is not justified if plants have tomato spotted wilt. Early digging is justified if:

- > CBR (black root rot), at least 40% disease
- > Stem rot or Sclerotinia blight, at least 50% disease
- > Leaf spot (see Key Points listed below)

Influence of Freeze Potential on Digging Decision

Freeze damage, often referred to as frost damage, can greatly affect peanut quality, peanut flavor and market value. Digging within 72 hours prior to an expected frost is extremely risky even when good drying conditions exist. Poor drying conditions will extend the unsafe window for digging peanut to greater than 72 hours.

Key Points

- > If 20% of leaves have visible lesions, do not spray additional fungicide, as 60% of leaves are likely infected.
- > If 40% of the canopy is defoliated, dig and invert vines as soon as possible regardless of pod mesocarp color.
- > To go from 10% defoliation to 20% defoliation takes about one week. To go from 25% defoliation to 50% defoliation takes about one week. Peanuts can go from 50% defoliation to almost complete defoliation in about one week.

Sclerotinia blight stem shredding and bleaching

Spider mites

Pod symptoms from southern stem rot

Drought

Late leaf spot

Peanut root-knot nematode

Rhizoctonia

Black root rot (CBR)

Lesions caused by Rhizoctonia

Southern corn rootworm damage

Cutworm damage

Wireworm damage

Freeze damage

Physical damage

Calcium deficiency

Black root rot (CBR)