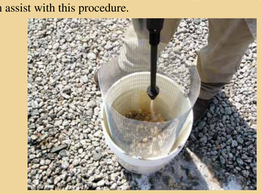
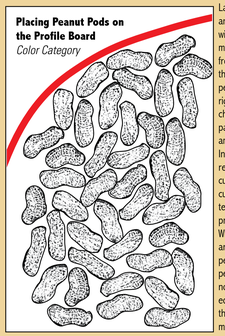
Maturity Profile Board for Virginia-Type Peanuts

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. The volume occupied by 150 pods is approximately 2 quarts. 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.





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 un-favorable or when peanuts are damaged by pesticides, samples may not be uniformly distributed. This makes predicting the optimum digging date more difficult.

The percentages are based on the pod size of CHAMPS, which is intermediate in size among Virginia market types. The chart may be used for runner market types, although the percentage values will be inaccurate. Pod shed of runner market types is generally lower than shed of Virginia market types after optimum marturity has been reached.

The darker the mesocarp color, the more mature the peanut pod and kernels within. Kernels in darker-colored pods are heavier, will shrink less, and will grade better than kernels with a lighter mesocarp color. Depending on the completeness of pod and kernel development, the entire hull may not have a uniform color. The saddle region is the most accurate indicator of kernel development.

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.

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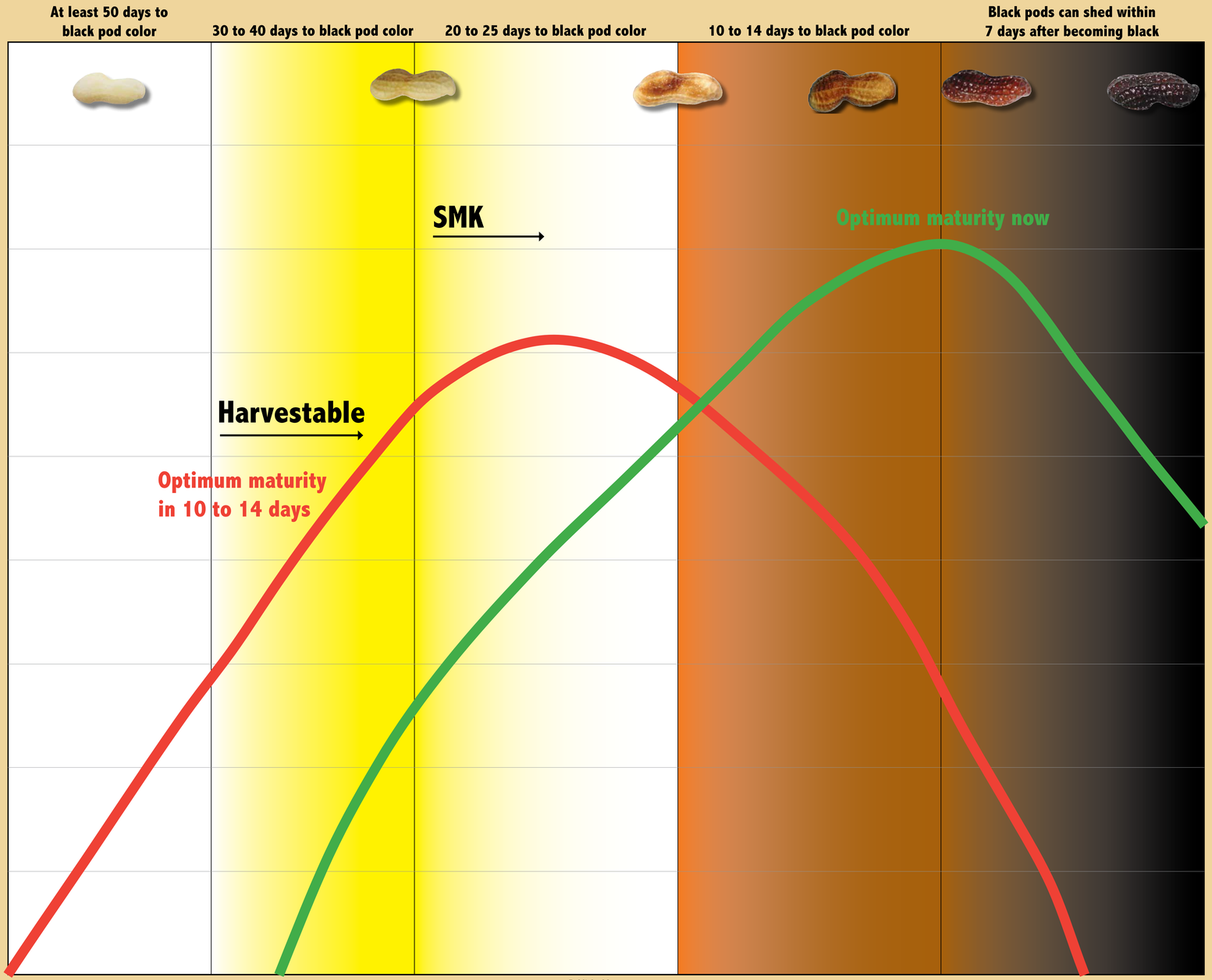

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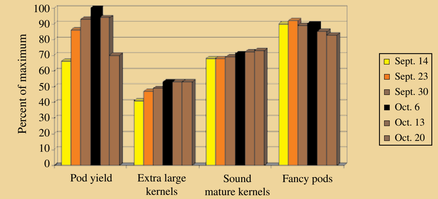
Factors influencing the decision to dig

- Pod maturity (influenced by variety and environmental conditions and plant health)
- Heat unit accumulation and soil moisture
- Peanut acreage, especially relative to other crops
- Soil conditions and weather forecast (likelihood of freeze damage)
- Disease pressure (balance between pod loss and increased pod fill and pod weight)
- Digging, combining, hauling, and drying capacities

Digging date's influence on yield and market grades for the Virginia market type variety Gregory planted May 5 at the Peanut Belt Research Station located near Lewiston-Woodville, NC. Data are presented as percent of maximum.



Influence of disease on the digging decision

Diseases can dramatically affect 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. Growers gain the greatest flexibility in digging by protecting vines from disease. Early digging is justified if:

- CBR (black root rot), at least 40 percent disease
- White mold or Sclerotinia blight, at least 50 percent disease
- Web blotch and leaf spot, at least 50 percent defoliation

Influence of freeze potential on the digging decision

Freeze damage, often referred to as frost damage, can greatly affect peanut quality, peanut flavor and market value. Digging within 3 days 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 3 days. A small percentage of peanut with freeze damage can decrease economic value from the contract price to the price of peanut crushed for oil.

Influence of logistics on the digging decision

Digging and harvesting capacities for growers are important to consider. The speed at which growers can plant peanuts is not the same as the time it takes to dig, combine, dry and haul peanuts. Four-row and six-row equipment can dig 30 and 40 acres per day, respectively (assuming 10 hours at 3 mph). Harvesting capacity for these respective equipment configurations is approximately 15 and 20 acres per day under good conditions.

Relative ranking of days to optimum peanut maturity using heat units and relative difference in the number of days required to reach optimum maturity.

Variety	Heat units	Days
CHAMPS	2,550	-5
Bailey	2,590	-3
Sugg	2,630	-1
NC-V 11	2,650	0
Gregory	2,650	0
Perry	2,720	+5
Florida Fancy	2,790	+7

For example, the variety CHAMPS will reach optimum maturity 5 days before the variety Gregory. The variety Perry will reach optimum maturity 5 days after the variety Gregory. Relative differences in maturity assumes varieties planted on the same day and grown under good conditions.

Average heat unit accumulation per day (DD_{86}) from May 1 through November 1 at Lewiston-Woodville during 2009, 2010, and 2011. These data are useful in estimating the time it may require for peanut maturation to occur but are not a substitute for examining pod mesocarp color throughout the fall.

Dates	Average for the Interval Described		
	2009	2010	2011
May 16 to June 15	17.8	19.1	20.7
June 16 to July 15	20.1	24.5	25.2
July 16 to August 15	22.9	26.3	28.0
August 16 to September15	18.5	20.9	21.3
September 16 to October 15	11.9	14.4	11.1
October 16 to November 1	7.1	9.3	1.3

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