

## **New Information on Peanut Response to Freezing Temperatures Before and After Digging**

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Freeze damage can result in a designation of SEG II significant financial loss for farmers. Current recommendations in North Carolina are that peanuts should be dug no closer than 72 hours (3 days) prior to a frost or freeze event to prevent damage. There are no data available that support this recommendation. Additionally, farmers are encouraged to dig pods and invert vines within 5 days after above-ground damage from freezing temperatures. There is also no data available to support this recommendation. In 2023, a freeze was predicted for November 2 in central and northeastern North Carolina. In an effort to support or refute current NC State Extension recommendations, peanut was dug 24, 48, and 60 hours prior to freezing conditions and 12 hours after the freeze. A second freeze occurred the night following the first freeze. Drying conditions were good 60 hours prior to the freeze but not 48 or 24 hours prior to the freeze. When pooled over two locations, percent freeze damage averaged 1.8%, 3.1%, and 4.0% at these respective digging dates relative to the freeze event. When considering variation among the 10 replicates from two locations for each digging date, the highest amount of damage was 3.8% (60 hours), 5.1% (48 hours), and 6.0% (24 hours). Peanuts dug after the freeze event the night before but prior to a freeze event the following night was 2.5% with a high of 8.8% from one of the replications. Twenty-four hours prior to the freeze event, kernel moisture was 30 to 38% (dug 60 hours prior to the freeze), 36 to 40% (dug 48 hours prior to the freeze event), and 40-46% (dug 24 hours prior to the freeze event). Unfortunately, a 72-hour interval was not examined. However, these results indicate that when peanut is dug within 72 hours prior to a freeze, freeze damage exceeds 2.0% (when considering variation in replications). Based on these data, and given contracts can be forfeited when freeze damage is considerably below Federal-State Inspection Service designations for SEG II status, the recommendation for ceasing to dig peanut prior to a freeze event is now 96 hours with good drying conditions projected. A modest decrease in peanut yield was noted 5 and 12 days after the freeze when compared with digging prior to the freeze event. However, no difference in yield was noted when comparing digging 5 and 12 days after the freeze. These results suggest that while growers should pursue digging as soon as possible after a freeze, there is more latitude in timing of digging than previously recommended. Pod maturity, based on pod mesocarp color, was approximately 7 days away from digging to optimize pod yield throughout the period of time when the freeze event occurred.