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## THE TRUTH ABOUT PEANUT FERTILITY IN THE SOUTHEAST

**With peanut demand up and contract prices considerably higher than in recent years, growers in the Southeast are looking at ways to maximize production.** One area of production that is getting a lot of attention is plant nutrition, specifically fertilizer inputs. To be most profitable, it is important not to over-apply fertilizer nutrients; however, failing to apply adequate amounts of the required nutrients can result in crop yield reductions and monetary losses. This article will address some of the common perceptions about peanut fertility that exist in the Southeast, some of which are true, some are false, and some could be considered “true-ish”, meaning that the original concept was based on fact, but is being perpetuated out of context.

**“Peanuts remove as much P and K as other crops traditionally grown in the Southeast” is a TRUE statement.** A 2-ton/A peanut crop will remove approximately 22 lb  $P_2O_5$  and 34 lb  $K_2O/A$ . Comparatively, 2-bale cotton will remove 28 and 34 lb  $P_2O_5$  and  $K_2O/A$ , respectively, while a 30-bu/A soybean crop removes 24 lb  $P_2O_5$  and 42 lb  $K_2O/A$ . Most of these nutrient needs are met through fertilizer inputs. Over time, continued removal of soil nutrients without replacement will cause soil fertility to decline and yield losses will occur.

**What is interesting considering the nutrient removal similarities is that the statement “Peanuts do not require soil P and K levels as high as cotton or corn for optimum yield” is also TRUE.** In soil testing, the nutrient concentration that separates responsive and non-responsive conditions is known as the “critical level”. As soil test P or K falls further below the critical level for a given crop, the probability of a yield increase as a result of fertilizer additions becomes greater. In most states in the Southeast, peanuts have a considerably lower critical level for P and K than other crops typically grown in rotation with peanuts, which indicates that peanuts are more effective at utilizing or “scavenging” soil nutrient resources.

**However, the statement “Peanuts are an excellent scavenger crop and do not respond to direct applications of P and K” is only TRUE-ISH.** It is true that if soil test P and K were adequate for a preceding corn or cotton crop, it is unlikely that the subsequent peanut crop will respond to additional fertilizer applications. However, if the soil test indicates that P or K is below the critical level for peanut production (which may differ from lab to lab for various reasons) a direct fertilizer application to the peanut crop would be in order.

**The statement “Southeastern universities do not recommend directly fertilizing peanuts”, when taken literally, is also just TRUE-ISH.** This statement is only true in the proper context. In the case of P, most agricultural soils in the region do not test below the critical level for peanut production; thus recommendations for P applications to peanuts are quite rare. So technically, it is true that universities are not recommending P fertilizer be applied to peanuts. However, the lack of recommended P fertilizer is based on soil testing, not a general rule nor opposition to the practice. Some state guidelines do suggest that K recommended for a peanut crop be applied with the fertilizer for the preceding crop to avoid potential competition with Ca uptake at pegging. These same guidelines also state that if the recommended K did not go out with the preceding crop, it should be applied prior to planting the peanut crop. University extension specialists agree that while Ca-K interactions are a potential problem, they do not discourage growers from making K fertilizer applications when needed. They do, however, advise growers in this situation to be sure not to cut back on their gypsum ( $CaSO_4 \cdot 2H_2O$ ) applications.

**Finally, the idea that “Universities in the Southeast do not support fertilizing peanuts” is absolutely FALSE.** All universities and private labs in the Southeast have established guidelines for fertilizing peanuts and do make fertilizer recommendations when needed. It is widely accepted throughout the region that fertilization of other crops grown in rotation with peanuts will eliminate the need to apply additional P and K to the peanut crop. However, what is often forgotten is that the fertilization of the rotational crops needs to be in accordance with locally established, soil test-based recommendations. Otherwise, the peanut crop could be at risk for yield loss. Regarding peanut fertilization in the Southeast, a well-known university extension specialist says it this way, “If the soil test calls for it...apply it. End of story.”

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Abbreviations: P = phosphorus; K = potassium; Ca = calcium.

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