

*Example:*

**Step 1.**  $0.08 \times 10.5 \text{ lb manganese sulfate per gal} = 0.84 \text{ lb manganese sulfate per gal}$

**Step 2.**  $\frac{1 \text{ lb manganese desired}}{0.84 \text{ lb manganese per gal}} = 1.2 \text{ gal 8\% manganese product per acre}$

## LAND PREPARATION

Historically, peanut growers have used the moldboard plow equipped with trash covers to prepare a smooth, uniform, and residue-free seedbed for planting. The burial of old crop residue and weed seed has been effective in the long-term suppression of soil-borne diseases and short-term suppression of some weed problems. However, there is a growing trend in reduced-tillage crop production in North Carolina, and some growers are successfully using these practices. There has also been a significant decrease in the number of growers using mold board plowing.

There is concern about stratification of nutrients in reduced-tillage systems. For example, repeated applications of potassium in reduced-tillage cotton may result in excessive amounts of this nutrient in the pegging zone when peanut is planted in a reduced-tillage system. Growers are encouraged to test soils for excessive potassium levels and incorporate this nutrient with tillage, if needed.

Many peanut growers bed their peanut fields either in the fall or spring. Many growers prefer planting on raised beds rather than flat planting. The beds often give faster germination and early growth, provide drainage, and may reduce pod losses during digging. While reduced-tillage systems can be as successful as conventional tillage systems, reduced-tillage systems often have less consistent yields than in conventional tillage systems. However, more recently most peanut product has shifted to sandy soils that respond more favorably to reduced tillage systems.

For example, in experiments conducted from 1997 through 2001, peanut yield was approximately 5 percent higher when planted in conventionally tilled fields compared with planting in strip tilled fields. In contrast, in experiments conducted from 2002 through 2005, peanut yield was approximately 2.3 percent higher when planted in strip tilled fields rather than conventionally tilled fields. The change in yield was associated with the greater number of trials during 1997 through 2001 on the finer-textured soils compared to the lower number of trials during 2002 through 2005 on these soils.

Because of concern about digging losses on finer-textured soils, it is recommended that beds be established in the fall with a grass cover crop with peanuts strip-tilled into previously prepared beds. Research during 2005 and 2006 demonstrates that wheat, cereal (cover crop), rye, oats, and triticale can serve equally well as cover crops grown the winter and spring prior to planting peanut. A risk advisory index has been developed to assist growers in deciding the risk of peanut yield in reduced tillage systems being lower than yield in conventional tillage systems (Table 3-10). The following risk advisory index has been modified from the initial version.

**Table 3-10. Advisory Index for Determining the Risk of Peanut Yield in Reduced Tillage Systems Being Lower Than Yield in Conventional Tillage Systems**

<p><b>Soil series</b></p> <p>Roanoke and Craven...40            Goldsboro and Lynchburg...20            Norfolk...10            Conetoe and Wanda...0</p> <p><i>Pod loss on finer-textured soils, such as those on the Roanoke and Craven series, is often greater than on coarser-textured soils, such as Conetoe and Wanda series, regardless of tillage system. Difficulty in digging can increase when these soils become hard in the fall if rainfall is limited.</i></p>	<p><b>Soil series</b></p> <p><b>Your score:</b></p> <p>_____</p>
<p><b>Tillage intensity</b></p> <p>No tillage into flat ground...40 points            Strip tillage into flat ground...10 points            Strip tillage into stale seedbeds...0 points</p> <p><i>Peanut response to reduced tillage systems is invariable correlated with the degree of tillage. Efficient digging can be difficult when peanuts are planted in flat ground in reduced tillage systems. While fields may appear to be flat and uniformly level, often fields are more rugged than they appear, and setting up the digger to match unforeseen contours in the field can be difficult. Strip tillage into flat ground is a better alternative than no tillage into flat ground, although digging peanuts planted on flat ground can be more challenging regardless of the tillage system. Strip tillage into preformed beds often results in yields approaching those of conventional tillage.</i></p>	<p><b>Tillage intensity</b></p> <p><b>Your score:</b></p> <p>_____</p>
<p><b>Risk of yield being lower in reduced tillage than in conventional tillage:</b></p> <p><b>40 or Less—Low Risk</b>  <b>40 to 50—Moderate Risk</b>  <b>60 or More—High Risk</b></p>	<p><b>Total Index Value</b></p> <p><b>Your score:</b></p> <p>_____</p>