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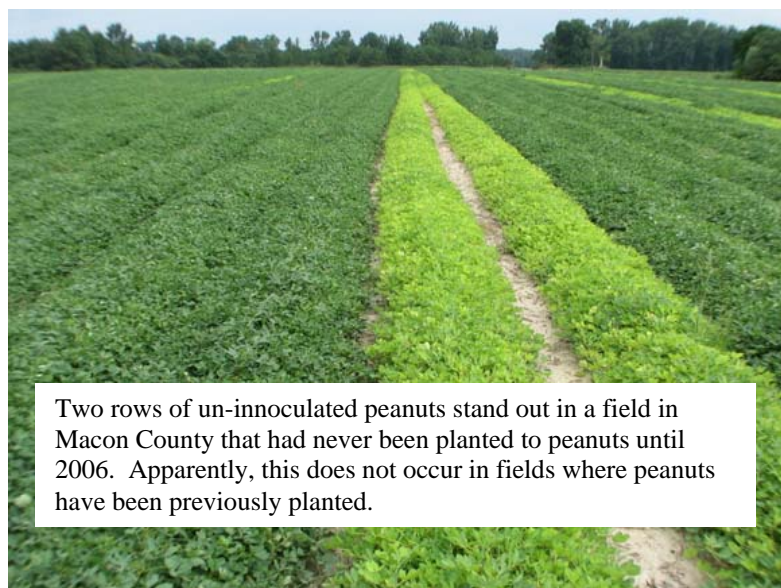
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A Comparison of Peanut Inoculums for Traditional Peanut Soils

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There is a demand by producers for peanut inoculation research in the traditional growing area. Peanut and its root nodule bacteria fix large amounts of atmospheric nitrogen. Effective



Two rows of un-inoculated peanuts stand out in a field in Macon County that had never been planted to peanuts until 2006. Apparently, this does not occur in fields where peanuts have been previously planted.

Rhizobia sp. either occurring naturally in the soil or applied at planting, are essential for nitrogen fixation. Peanuts on soil that has never produced peanuts before benefit from an inoculum until they build up enough *Rhizobia sp.* bacteria in the soil. However some companies claim that an inoculum helps the peanut initiate the inoculation processes whether or not peanuts have been grown there previously. Because of interest among producers in using inoculums on peanuts on soil with a past

history of peanut production, the objective of this research was to determine if there was a benefit for using an inoculum on soils with a past history of peanut production.

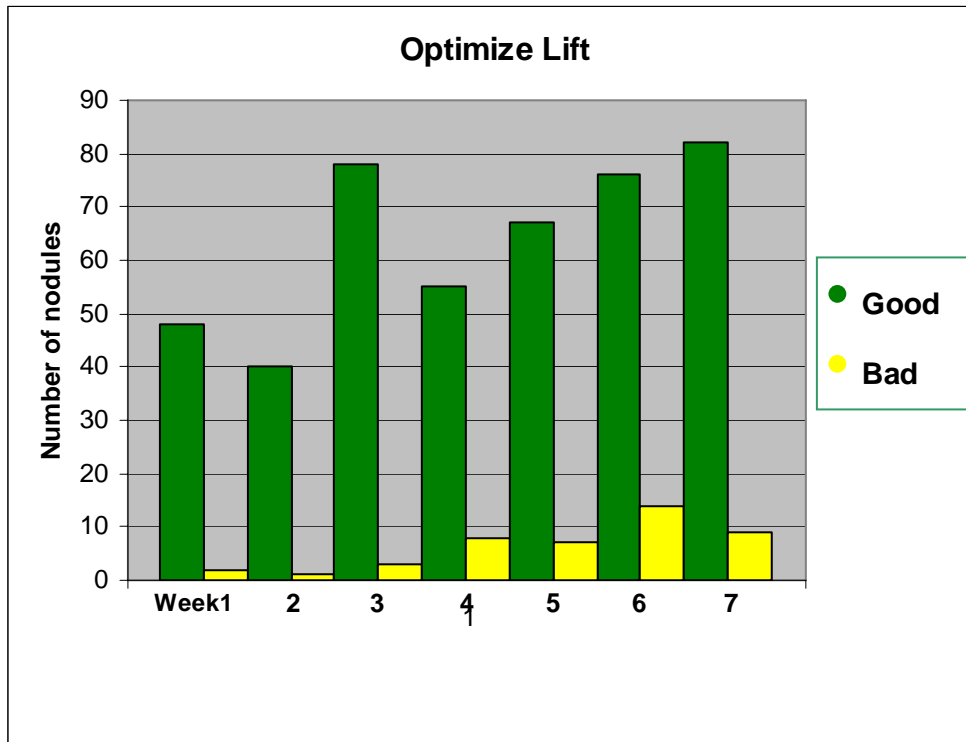
Production Methods

Work began on this test in 2005 on the Wiregrass Research and Extension Center in Headland, Alabama, on a Dothan sandy loam (fine-loamy, siliceous, thermic, Plinthic Kandiudults). A site was chosen that had been out of peanut production for 15 years. This would give us a chance to see if the bacteria would survive in the soil over a long period of time or if the inoculum would show a response over the check. The two inoculums were Dynastart® lot number P7258 and Optimize Lift® lot number RD23846-11140SCCH011E.

The plots were strip tilled and planted in single row Georgia Green peanuts on 23 May comparing the six replications of inoculums at the recommended rates to the check plots. Other production factors such as herbicides and fungicides were treated as needed according to Alabama Cooperative Extension System recommendations. On 23 June we began sampling plants for inoculation. The plots were sampled for inoculation every week for seven weeks. This was done by pulling up three plants and counting the total number of nodules on each plant, the number of red active nodules on each plant, and the number of clear inactive nodules on each plant. This process was done for each of the treatments in each of the six replications for a seven week period.

Results

The first year of research was unable to show any significant benefit for using an inoculum for yield or grade (Fig. 1-2). We also rated each treatment for TSWV, leaf spot, and white mold (Table 1). The inoculum had no effect on tomato spotted wilt virus (TSWV), leaf spot, or white mold. The inoculation research done and published in Peanut Science 1983 showed no yield response to applied inoculant at six different locations. However, this research will be continued next year to see if there are any benefits to inoculating peanuts in the traditional growing area.



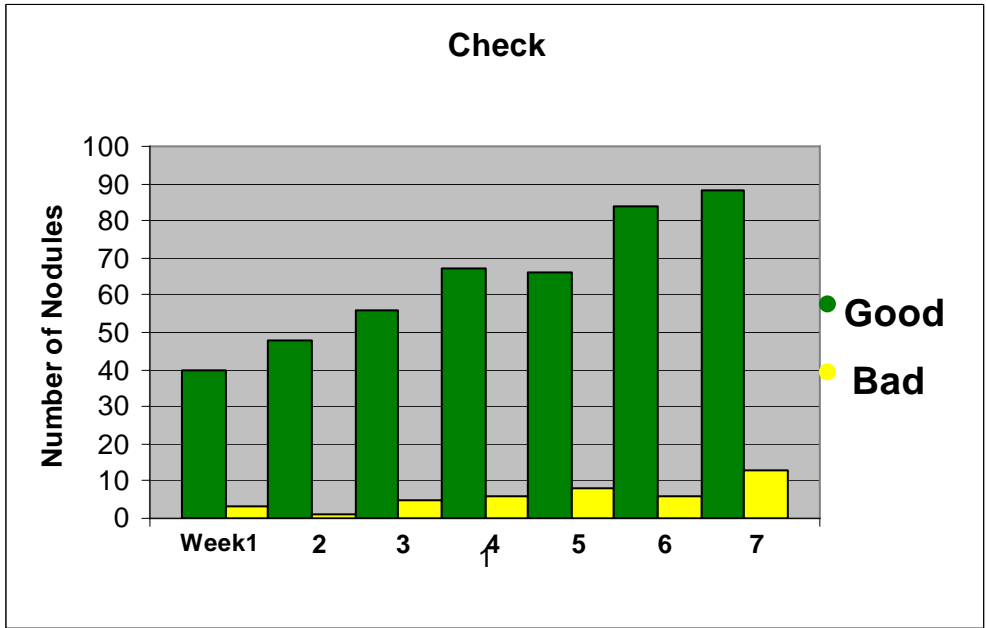
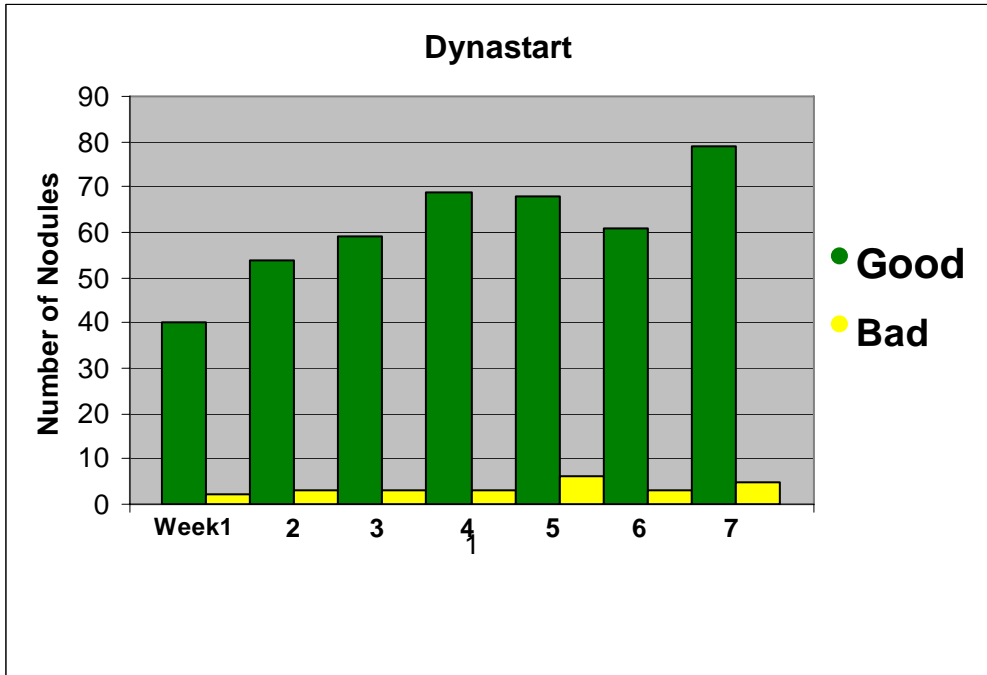


Figure 1. Average number of nodules for each treatment that are active (good) or inactive (bad) by week for two inoculums and the non-inoculated check.

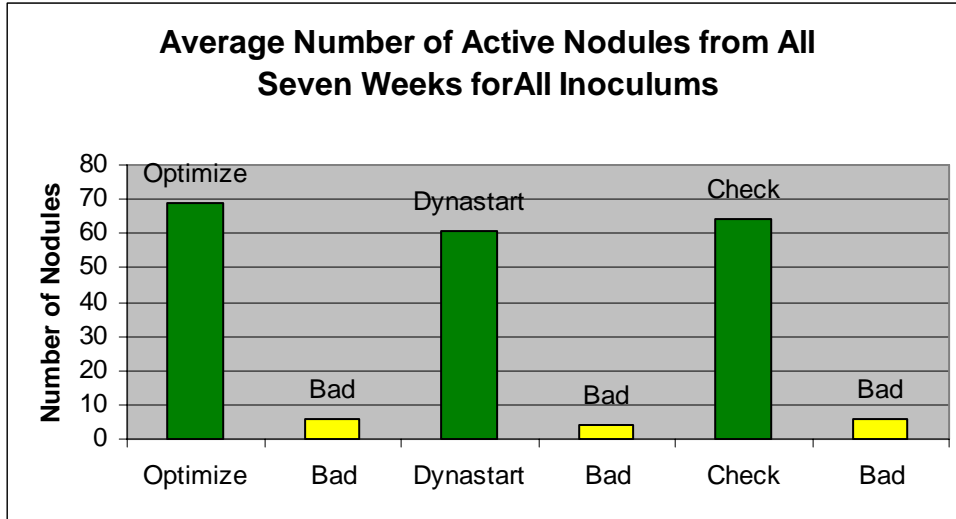


Figure 2. Average number of nodules active (good) or inactive (bad) for each treatment combining all seven weeks together.

Table 1. Inoculation Test 2005 at the Wiregrass Research and Extension Center Headland, Alabama.

Innoculum	TSWV		Whitemold		Grade TSMK
	Hits per 45 ft	Leaf Spot Rating	Hits per 90 ft	Yield lbs/ac	
Dynastart	6.6 a	2 a	5.6 a	4,800 a	71.0 a
Check	5.6 a	3 a	5.5 a	4,550 a	70.0 a
Optimize	7.1 a	3 a	5.6 a	4,510 a	70.0 a

This Timely Information Sheet was edited and prepared for posting by Charles C. Mitchell, Extension Agronomist-Soils.