

CROP ROTATION SYSTEMS FOR SOUTH TEXAS PEANUT PRODUCTION

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OVERALL SUMMARY OF CROP ROTATION STUDY IN 2005

This was the initial year for the crop rotation study. Plots were established with corn, cotton, grain sorghum, and peanuts planted in the respective plots.

INTRODUCTION

Rotation systems in peanut help to reduce diseases as well as improve soil quality and can result in an increase in peanut yields. Over the past few years, more cotton continues to be planted in the south Texas peanut growing region and the general consensus is that this trend in increased cotton acreage will continue over the next few years. As these acres increase, growers continue to question the effects of a cotton-peanut rotation on disease development and peanut yield and quality. These growers have seen reports from the southeast and other peanut growing regions on the benefits of a cotton-peanut rotation but there has been little or no work in the southwest, specifically south Texas, evaluating the effects of a rotation system. Therefore, research information is needed on the effects of rotation on peanut yield and quality in the south Texas area. Also, the economics of these rotation systems need to be investigated to determine the most economical system for producers.

MATERIALS AND METHODS

Field studies were initiated at the Texas Agricultural Research site at Yoakum during the 2005 growing season. The following rotation systems based on a four-year rotation were established with the following cropping systems: 1) continuous peanuts, 2) corn-peanuts-corn-peanuts, 3) cotton-peanuts-cotton-peanuts, 4) cotton-cotton-peanuts-peanuts, 5) grain sorghum-peanuts-grain sorghum-peanuts, and 6) corn-cotton-peanuts-peanuts. Corn (Pioneer 31G20) and grain sorghum (Garst 5624) were planted on April 7. This was a late corn planting but rains in March prevented getting into the field for an earlier planting. Cotton (PSC410RR) was planted on April 28 while peanut (T-96) was planted on June 7. Plots were fertilized and maintained throughout the growing season with the proper growing techniques for each crop. Sprinkler irrigation was applied during the growing season as needed for the various crops. Crops were harvested when mature.

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RESULTS AND DISCUSSION

Cropping system yields were as follows: 1) peanuts, 2791 lbs/A; 2) corn, 85 bu/a; 3) cotton, 2.4 bales/A; 4) cotton, 2.3 bales/A; 5) grain sorghum, 2780 lbs/A; and 6) corn, 68.7 bu/A. Due to dry weather conditions, soil-borne or foliar diseases never became a problem. Due to the late planting of corn for the area, corn yields were lower (68 to 85 bu/A) than expected.

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