PEANUT GROWING IN THE MARKHAM VALLEY

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INTRODUCTION

The area under peanuts in the Markham Valley is expanding rapidly with individual smallholders having as much as 40 hectares of the crop at any one time. While mechanised land preparation and sowing is necessary for this expansion, improved management techniques must be considered if productivity is to be maintained and growers are to get good returns for their efforts. Variety and seed quality, sowing rate and date, rust control, rotation cropping and crop storage are important.

RECOMMENDED VARIETY

White Spanish variety 454 which was developed by D.P.I. Bubia for the Markham Valley, is recommended, and has proven superior to all local and overseas varieties in experiments over the last ten years. Average yields of kernel were around 1 t/ha and up to 2 t/ha in some instances. This variety was released for commercial use in 1973 but it is doubtful whether the seed produced by farmers now is still pure. Small quantities of pure seed are available from the Agriculture Research Centre, Bubia.

SEED QUALITY

It is recommended that some of the more progressive growers establish seed gardens. Only the best quality kernels (ie. large and undamaged) should be used and seed should be stored in the shell until required. Hulling and planting equipment should be properly adjusted to ensure that seed is not damaged during these operations as damaged seed is more susceptible to disease and insect attack and may result in poor crop stands.

Treatment with a dressing will help to reduce the effects of seed damage on germination and establishment. ICI's sorghum seed dressing containing thiram, malathion and lindane is suitable and should be applied to the seed before sowing at 0.1 to 0.2% w/w of seed.

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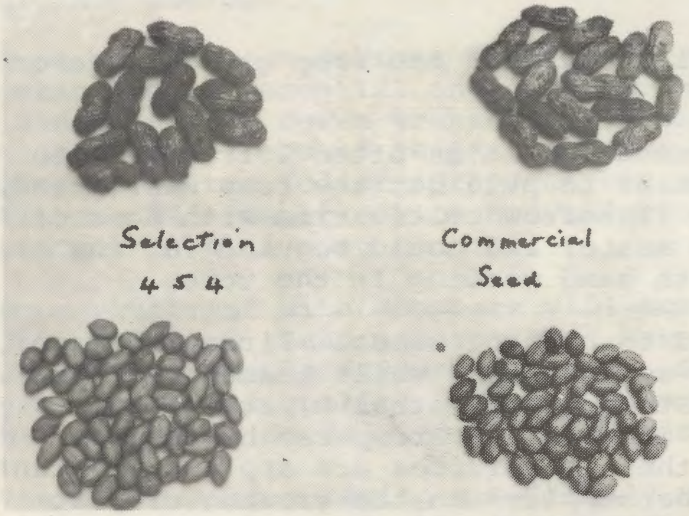

Comparison between White Spanish variety 454 and commercial seed.

LAND PREPARATION

Most areas are suitable for growing peanuts. Avoid shallow gravelly soils and poorly drained areas. Thorough preparation over at least three months is essential on virgin ground with four to six workings to ensure adequate breakdown of organic matter, good fertility and a fine tilth for sowing. Between crops, fewer workings are required but they should be sufficient to control weeds and give good tilth.

Fertilizer is generally not required but if too little preparation is done on virgin ground, nitrogen and sulphur may be limiting. In this case application of ammonium sulphate at 2.5-5.0 bags/ha could give a better crop. Application of superphosphate at 2.5 bags/ha could improve crops on soils with low phosphorus (5-10 ppm) such as around Leron and Umi on shallow gravelly soils.

SOWING

Adequate moisture for the first half of the crop growing season is essential for good yields. This can generally be guaranteed by sowing from January to early March in most areas. Earlier sowings should be restricted to areas of high, reliable rainfall, generally in the western end of the valley but there will then be a high risk of wet conditions at harvest. Later sowings should be restricted to deeper soils in the same area. In the Erap/Chivasing area, cropping on the better soils is possible in the south-east season in most years, with sowing in July or August, depending on the start of the season.

About 60 kg/ha of kernels should be sown to give 100 000 plants/ha. This gives 1 plant every 10cm in rows 100 cm apart or 1 plant every 15 cm in rows 70 cm apart.

WEED CONTROL

This is important in the first half of the crop growing season to ensure good yields.

Handweeding is used at present but it is often left until too late when the weeds are easier to pull but the crop has already suffered from competition. Interrow cultivation with hoes or tractor drawn tynes may be easier and could be used for the first four to six weeks with hand weeding in the rows.

Herbicides can also be used to control weeds. Diurex (diuron) will give the best overall weed control while Lasso (alachlor), Treflan (trifluralin) and Stomp (pendimethalin) are more specifically for grasses. Treflan and Stomp can be used to control *Rottboellia*. All these herbicides are applied at planting. 2,4-DB and MCPB can be ~~supplied~~ applied to the growing crop to control pigweed and milkweed respectively. Rates of application will vary depending on the weeds and the stage of the crop and enquiries should be directed to the Agriculture Research Centre, Bubia for specific recommendations. The chemicals recommended for weed control must be handled with care, and warning instructions printed on the label should be strictly followed.

Handweeding

DISEASE CONTROL

Rust is the most serious disease of peanuts in this area. Early detection is essential and crops should be inspected at weekly intervals from seven weeks after sowing. The underside of the oldest leaves should be examined for brown rust pustules. If present, three foliar sprays at two weekly intervals with either Dithane M45 (mancozeb) or Bravo (chlorthalonil) at 1.7 kg of product/ha will give control.

Boom equipment with droppers will ensure good coverage on the larger farms. Knapsack sprayers have been used in trials and would be suitable for small areas. Spraying will give higher yields, better quality nuts and even maturity and will enable harvesting to be delayed with a minimum of nut loss.

The effects of spraying are usually not evident until about two weeks before harvest when unsprayed areas start to loose their leaves. Yield losses of up to 70% have been attributed to rust damage in trials. Bravo will also control *Cercospora* leaf spot which is not as serious as rust, but Dithane will not. The chemicals recommended for rust control must be handled carefully and the label instructions must be carefully followed.

Work on rust resistant lines has been a little disappointing. Lines which showed early promise have not yielded well in all situations and have rarely surpassed 454 ~~kg/ha~~. While release of these lines for general cropping is not planned for the near future, lines with moderate yield potential may be useful in areas with acute rust problems. A promising Spanish line with good resistance and yield potential is being introduced from Queensland for testing here.

INSECT PEST CONTROL

There are no major insect pests of peanuts in the field.

ROTATION CROPPING

Continuous cropping of peanuts at one site leads to a build up of weeds and rust which soon causes a reduction in yield. The effects of weeds are usually not acute until the third peanut crop on virgin ground.

At this stage, maize could be introduced as a rotation crop as its vigorous early growth helps to suppress weeds and the herbicide atrazine could be used to give weed free conditions. As peanuts are a legume crop, they supply nitrogen to the soil and this will ensure a healthy crop of maize. Peanuts could then be sown again in the following season and a yearly rotation of maize and peanuts could be carried out.

YIELDS AND RETURNS

The crop will normally be ready to harvest 100 days after sowing.

Yields of up to 1 t/ha of kernels can be expected if recommendations are followed. With current prices of around 50 toea/~~ha~~ Kg

this represents a gross return of K500/ha. With current costs of production ranging from K100 to K200/ha, depending on location and level of input, profits can be very good.

CONCLUSIONS

Although these general recommendations for peanut growing have been given in previous publications they have resulted in little change in production practices. Greater extension effort is needed to ensure that productivity is maintained and a series of farm demonstrations is planned to make sure that:-

(i) farmers and extension officers are aware of the improved management practices,

(ii) the improved practices are in a form that is acceptable to the farmers.

Good establishment and early weed control are essential for best peanut yields.

We cannot expect practices to change overnight and we know that some of our recommendations will have to be modified with time to meet individual farmers' needs. But please be reassured that advice is readily available.

CONTACT D.P.I., BUBIA FOR FURTHER INFORMATION ON PEANUT GROWING.