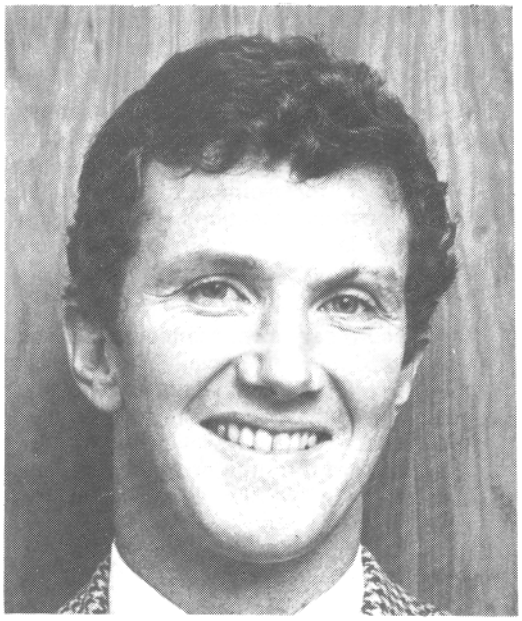
South African Avocado Growers' Association. Yearbook 1986. 9:15-16

THE AVOCADO PLANT IMPROVEMENT SCHEME

CJ PARTRIDGE
SAAGA, TZANEEN

PROGRESS REPORT



SUMMARY

Suggestions are made to improve the quality of nursery trees and to introduce virus-free schemes. It is envisaged to introduce certificates for sunblotch-free nursery trees.

OPSOMMING

Voorstelle word gemaak om die kwaliteit van kwekery-boompies te verbeter en om 'n virusvry skema op dreef te kry. Sertifisering van sonvlekvrye kwekery-boompies word in die vooruitsig gestel.

In a previous article, (Partridge 1984), long-term planning for the Plant Improvement Scheme was discussed. Many of these plans have almost reached fruition or are underway. This progress report briefly outlines more plans for the future.

The Avocado Nurserymen's Association (ANA) comprises eleven nurseries participating voluntarily in the scheme, and liases closely with SAAGA and other parties such as the CSFRI and the Division of Plant and Seed Control. Due to the nurserymen's enthusiasm

and commitment, ANA has met regularly and acts as a valuable forum for discussion, planning and for maintaining interest and contact amongst the nurserymen.

Indexing parent trees for sunblotch viroid has become a reality and this is probably the most significant factor for future progress of the scheme. Much time and a lot of money has been invested by SAAGA, nurserymen and research workers in this aspect of the scheme. Commercial indexing has been begun by the Department of Microbiology and Plant Pathology of the University of Pretoria using techniques developed overseas and credit is due to Prof. Kotzé and his team: Use Korsten, Adriaan Botha and Louis Haycock as well as the nurserymen who have all submitted samples for indexing. Final results of indexing are due in April 1986, after which nurserymen hopefully will be in a position to start producing certifiable sunblotch-free trees which will be of great benefit to the industry.

Research remains the backbone of any successful industry and following reports by nurserymen of problems experienced with poor grafting take, the Nurserymen's Association and SAAGA has sponsored a student at the University of Natal to undertake research on this aspect for post-graduate study in 1986 and 1987.

Minimum nursery standards originally drawn up by SAAGA were discussed and agreed upon for application by nurserymen. All nurseries participating in the scheme are already of a high standard and these standards will be maintained and advised on in the course of extension visits by SAAGA and the Division of Plant and Seed Control.

A number of so-called "escape" trees have been selected and indexed with a view to possibly selecting a locally adapted *Phytophthora* resistant rootstock in the medium term. This however, must be an on going process and will be supported by a breeding programme in the future. Fortunately the industry has the benefit of overseas selections at this stage and apart from Duke 7, some nurseries will have appreciable quantities of trees on other clonal rootstocks such as G755 and G6 in the future, thus enabling a grower to spread his risk.

New cultivars imported from America are due to be planted out on trial in conjunction with the CSFRI and after positive evaluation will be released via the nurseries to the industry. Improving productivity should be the aim of every grower and some of the selections have shown great promise overseas and will hopefully perform equally as well in South Africa.

Grower demand for good quality trees has been improving. It is felt that this is due to grower education by extension and the fact that with improved techniques, excellent quality trees on clonal rootstocks have become available from participating nurserymen. Some nurseries report being fully booked to the end of 1987 and prospective buyers are urged not to be put off by the waiting period but to rather wait that bit longer to ensure obtaining the best quality available. 1. The following is envisaged for the future:-

Nurseries being able to supply three classes of trees to growers:

a) Uncertified trees produced from sources which may or may not have been tested for sunblotch and other viruses.

b). B-certificate tree - trees produced from mother trees which have been indexed negative for sunblotch (Seed and Scion Source). Such trees need not necessarily be

on clonal rootstocks and will only be certified sunblotch free.

c). A-certificate trees (long term) - trees on clonal rootstocks which are from negative indexed material on clonal rootstocks and that have yield records known for the last six years.

2. A rootstock screening programme be implemented whereby promising selection can be evaluated for *Phytopthora* resistance.

3. It was mentioned above that overseas selection will be evaluated. There is, however, tremendous scope for local selecting and growers themselves can play a large role in this aspect, for example: large-fruit Mass selections, prolific bearing selections of any variety, waterlogging tolerance, late bearing Fuerte trees, root rot resistance etc. A breeding programme would be of great benefit to plant improvement work.

4. Yield record data from promising individual trees and on an orchard basis (especially those on clonal rootstocks) must be collected for selection of outstanding propagation material. This is also important work for growers to undertake, as such data takes much of the guesswork out of an orchard thinning programme. Fortunately Mr Ben Durand of the CSFRI is already actively engaged in this work and has shown that production can vary considerably from tree to tree, even those on clonal rootstocks, which corresponds with Israeli experience. This information should eventually yield valuable knowledge on

ideal stock/scion combinations for varying climatic areas.

Plant improvement work is long term by nature, but it remains one of the most fundamental prerequisites for success in any horticultural industry. It is felt that with the excellent co-operation between the nurserymen, SAAGA, the CSFRI, universities and the various Government Departments that the scheme is progressing steadily.

REFERENCES

PARTRIDGE, C.J., 1984. Plant Improvement Scheme Long-Term Planning. S. Afr. Avocado Grws.Assc. Yrbk. 7,23.

APPENDUM

The following nurseries are participating in the Plant Improvement Scheme:

Agriven Nursery
Mr. A Tuffin Private Bag 2346 SIBASA (01559-21141)

H.L Hall & Sons Ltd.
Mr. N. Thomas P.O. MATAFFIN 1205 (01311-24221)

Springfield Nursery
Mr. A.P.N. Whyte P.O. Box 1547 LOUIS TRICHARDT (01551-4010)

Allesbeste Kwekery
Dr. A.A. Ernst P.O. Box 91 TZANEEN (015236-5736)

Omega Boerdery
Mr. J. Koekemoer P.O. Box 67 HAZYVIEW (0131242-3503)

Tipperary Nursery
Mr. B. Ric-Hansen P.O. Box 247 NELSPRUIT (01311 -23920)

Westfalia Nursery Mr. M. Slabbert P.O. Box 14 DUIVELSKLOOF (015236-3212/3266)

Green Farms Nursery
Mr. M. Dovey P.O. Box 74 WHITE RIVER (01311 -33071)

Schagen Nursery
Dr. A. Hough P.O. Box 77 SCHAGEN (0131232-3730)
Mr. J. Twycross P.O. Box 25 SCHAGEN (0131232-1312)