ADVANCES AND OPPORTUNITIES IN OLIVE PRODUCTION:

Why research and technology development is required for success

Industry background

Olives have been grown for thousands of years as a source of olive oil and preserved foods. Traditional olive farming systems without the help of government subsidies are no longer profitable. The development and application of new technology are required in olive production for this industry to be competitive and flourish in a rapidly changing environment.

Agriculture has always been a risky business due to the inherent nature of the task. Although the application of modern technology can help mitigate some of those risks, it can also create problems of its own such as environmental degradation through monoculture and injudicious agrochemical use. Land, water and labour for agriculture have become increasingly scarcer resources which must be utilised more efficiently and conscientiously.

The long-term economic and social benefits of applying agricultural technology must outweigh the total cost of developing and applying this technology and result in more sustainable food production. Olive growing needs to follow in the way of other fruit industries to maintain profitability.

Olives fresh off the tree are inedible and must undergo some form of technological intervention to be processed into either table olives or olive oil. Specific cultivars are planted for specific end use.

South African olive producers have earned a reputation for high quality products because of the relatively small size of the industry and individual production units. There is a demand by discerning consumers worldwide for such oils as opposed to the commodity product, which inundates supermarket shelves internationally. Consumers who have become aware of the health benefits of olive

oil in the diet now need to learn to discern the differences in quality and flavours of olive oils.

Olives feature in the National Development Plan as an industry with high growth potential because of the crop's health benefits, the tree's relatively good tolerance to drought and salinity, its high harvesting labour requirement at a time that complements other fruit industries, as well as the export potential of a product that demands value adding. Growers favour the latitude with harvesting date, the relatively low spoilage incidence compared to other fruit, as well as the pilfer-proof nature of the product, while processors have a two-year window to sell their products.

The olive industry in the Western Cape, especially table olive processing, has much potential to develop further and be more profitable to growers if a number of identified problems and risks could be eliminated. These problems are inter-related and can be solved by improving orchard systems, genotypes and processing technology. Much of the information is already available and needs to be tested and applied for our conditions. In those cases where knowledge is lacking, the industry needs to invest in research.

Compared to other crops, olive growing is characterised by the following challenges:

- a lengthy unproductive period after planting resulting in a delayed return on capital investment,
- low yields averaging 3 to 4 tons per hectare and poor yield efficiency where trees produce proportionately much more wood than fruit,
- alternate bearing,
- vigorous, dense and upright trees with no growth controlling rootstock available,
- high costs of harvesting (which is related to vigorous trees, small and uneven fruit size, high fruit removal force and uneven fruit ripening),
- susceptibility to diseases such as Verticillium wilt and anthracnose *(Colletotrichum)*,
- susceptibility to pests such as olive fly, tingid, seed wasp and inadequate, unsustainable pest control measures,
- irrigation management information and experience are both limited locally regarding optimum and minimum levels of irrigation scheduling as related to evapotranspiration and tree growth cycle over the year, so called regulated deficit irrigation (RDI).

Research Focus

The trend today is to fund short term research projects where specific answers can be found quickly, usually with the help of universities. The traditional long term programmes that were in the past run by government, such as cultivar development and evaluation, are less popular to funders. However, a conventional cultivar development programme is fundamental to the other facets of research that require attention.

With a number of serious problems vying for attention and the limited budget, capital and human resources available the question is how research programmes and projects are prioritised for funding. The following are considered to be the most important criteria to determine where the priority lies:

- the seriousness of problem addressed in terms of threat to grower and industry (financial implications and number of growers potentially affected),
- approaching various aspects which can be tackled individually, sequentially and possibly collaboratively
- the likelihood of being able to make a significant contribution to solving a problem within a reasonable period and at a reasonable cost,
- the availability of local and/or international expertise,
- focusing on the solution with the highest chance of improving profitability or reducing losses over longterm.

Funding available to research through statutory levy can be used as leverage to access funders for industry research e.g. THRIP and other NRF or DTI programmes locally or possibly overseas.

Collaborate with universities or tertiary education institutions who have students available for short term projects, grants available for previously disadvantaged students and the possible exchange of students or researchers internationally.

Growers collaborating through levies and providing required feedback are investing in research projects of long term benefit to the whole local olive industry.

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