AN INTERACTIVE MOBILE APP FOR DRYLAND SMALL SCALE COTTON FARMERS DEVELOPED BY THE COTTONHAND COMPANY

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Developed in South Africa by THECOTTONHAND (Pty) Ltd Company and supported by SA Cotton.

This cotton farming App provides a guide on how to grow cotton (dryland and irrigated) with the following modules: basic expense management, land and seedbed preparation including micro nutrients management, seed planting, growing cycle management, identification and control of insects (pests), weeds, and diseases (including nematodes) as well as offering detailed advice on how to safely use and store harmful chemicals, and finally, a guide to harvesting.

Each module contains distinct information which guides the user on a step-by-step basis through every aspect of cotton cultivation.

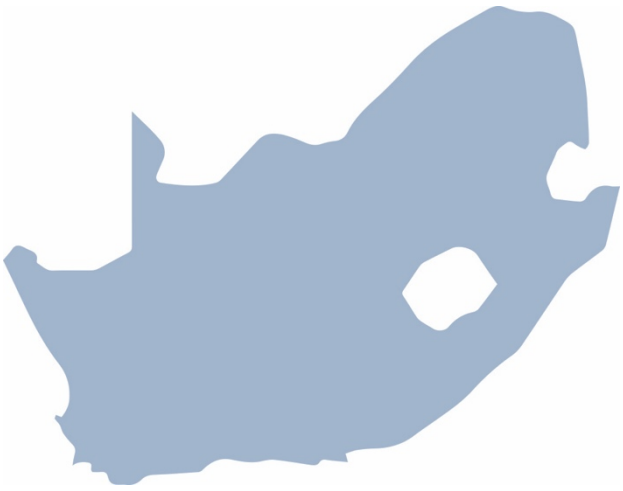
Before the start of the instruction, the grower is informed via an icon, about the most desirable **properties of the cotton fibre** and the absolute need to keep **the fibre free of any type of contaminants**. The grower will be advised that the **desired outcome** can be achieved through precise adherence to the guidelines and instructions provided in the App. Naturally, weather conditions play a major role in plant development.

Selecting a specific icon will show these **desired cotton fibre properties**, as well as the importance of contamination prevention, where after the user presses the 'Continue' button and he/she will automatically come to the starting site. From there on, there is an interactive flow from one module to the next.

OVERVIEW of the 9 Modules

(Note: The App software is based on a flow chart concept, while the screen shows the relevant icons, commands and guides as well as libraries.)

The South African cotton growing areas
A map is displayed which shows the relevant areas as well as the positioning of cotton gins.



Furthermore, prevalent soil types are described.

Module One
Financial management
A basic Income and Expenditure guide is shown as an example in order to encourage the grower to establish a basic budget before making the decision to plant cotton.

Module Two
Land and seedbed preparation as well as seed planting
This module is amongst the most important and complex ones and starts with soil sampling analysis, followed by planting, spacing and advice on herbicide and fertilizer application procedures as well as equipment usage recommendations.

Module Three
The cotton development and growing cycle
This module informs and advises the grower on the ideal conditions for the plant at every stage of its development, in terms of water and heat units demand.

Module Four
Scouting and quality assurance procedure
This module focuses on the most advantageous scouting route on the field and offers precise direction on how to observe and record any non-conformance issues such as the appearance of pests and diseases, as well as undesirable weed occurrences.

Lack of control and the non-discovery of harmful insects during scouting, such as thrips and others, which are not acted upon in a timeously manner, will affect growth and boll development and, in addition, interrupt fibre development as well as reducing fibre quality which also results in a poor harvesting yield.

Module Five
Insect identification and control procedures
This module displays a library of harmful insects split into early, middle and late season appearances and recommends corrective action to be taken for each type or group.

Module Six
Weed identification and control procedures
This module displays a comprehensive library of weeds split into three treatment categories, one for **Broadleaf**, the other for **Grasses** and for **Nutsedge** weeds, and recommends appropriate treatment procedures.

Module Seven
Disease identification and control procedures
Again, this module shows in three sections, namely, **Fungal, Bacterial and Nematodes diseases** and recommends the most suitable action to be taken in order eliminate or suppress the relevant disease.

Module Eight
Pesticide Safety and use
This module is important for the grower as it highlights not only the danger to human life if it is unsafely handled, used or stored incorrectly. It provides advice on some of the important steps to be taken in case of accidental spillage or human contamination.

Module Nine
Harvesting
This module provides an overview on the procedure for handpicked harvesting, but also includes the procedure for small-scale farmers, who use mechanical harvesting equipment. A good understanding of the harvesting procedure is emphasized, as well as highlighting the need to prevent contamination at all costs.

Summary

While the above modules focus on growing cotton in South Africa, the software is designed in such a manner that with relatively few changes adjustments can be accommodated for other country contexts (for example, planting dates, growing cycle, as well as the addition of other harmful insects and diseases into the existing App software libraries). The same applies for the use of various languages. It is, however, important that the translator of the text has a background in agriculture in order to ensure that no technical nuances are lost.

References

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4) Kathy van Zyl, A Guide for the Chemical Control of Weeds in South Africa, 2012, 1st edition.
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