

A G R I C U R A

Growing Farming Generations

Cleaner farming

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Sales and Marketing

Technical Service (Agronomist)

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- ❑ ENHANCING TECHNICAL KNOWLEDGE AND SKILLS TO STAFF MEMBERS.



OVERAL OBJECTIVE:

- ❑ Enhancing Organizational Profitability through excellent agronomy services –Satisfactory product knowledge, Product awareness, End user safety and Customer services excellency.



HISTORY OF COTTON PRODUCTIVITY

- ❖ The origins of cotton production and use go back to ancient times. The first evidence of cotton use was found in India and Pakistan, and dates from about 6,000 B.C. Scientists believe that cotton was first cultivated in the Indus delta.
- ❖ The species used in ancient South Asia were *Gossypium herbaceum* and *Gossypium arboretum* which originated in India and Africa.



COTTON GROWING AREAS IN ZIM

- ❖ Zimbabwe cotton farming is mainly on a small-scale.
- ❖ The crop is grown in the western part of the country in Gokwe, Sanyati and in the northern areas such as Guruve, Muzarabani and Mt Darwin. Checheche also has cotton farms.
- ❖ On a large scale, cotton is grown in Chinhoyi, Mazowe, Rafingora and Triangle.



ADVANTAGES OF GROWING COTTON IN ZIM

- ▶ The advantages of this crop to the front-line value adder are numerous and among them are the following:
 - ▶ a) There is low investment for any start up farmer wishing to grow the crop;
 - ▶ b) Inputs are readily available on credit terms from contractors;
 - ▶ c) Farmers have a ready market which guarantees cash on delivery; and
 - ▶ d) Technical know-how is readily available for free from both public and private sector extension services.



USES OF COTTON

- ▶ **Uses**
- ▶ Quite a number of textile products – shirts, jeans, towels, socks e.t.c.
- ▶ Also used in fishnets, coffee filters, book binding & archival paper
- ▶ Cotton is a food and a fibre crop – The seed is fed to cattle, crushed to make oil.
- ▶ Cotton is one of the oldest known natural fibres, today the world uses more cotton than any other fibre.



COTTON PRODUCTIVITY

- ▶ Planting time – Do not plant before 5th October in the Lowveld, October 20th elsewhere.
- ▶ Optimum planting dates – Last week of October to Early November
- ▶ Seed requirements – 20 – 30kgs of seed.
- ▶ Cotton is very sensitive to acidic soils, Below a pH value of 5.5 - magnesium based **Agricultural lime** should be applied to also satisfy magnesium requirements.
- ▶ Recommended plant **spacing 1m Inter-row * 0.30m In-row.**
- ▶ Recommended to thin to the required population 5 – 21 days after crop emergence.
- ▶ **Synthetic Pyrethroid Resistance Management Strategy - Restricted Pyrethroid Windows:** Lowveld - December 25th - 1st of March, Elsewhere – 1st of February - May 31st.
- ▶ **N.B. ALWAYS REFER TO THE ACARACIDE ROTATION SCHEME FOR CORRECT PRODUCTS TO USE AS PER ANY GIVEN AREA.**

FERTILIZER MANAGEMENT

- ❖ **Basal dressing/Base dressing:**
- ❖ **Agricura Compound L (4:17:11) – 350kgs/Ha, Apply all at planting.**
- ❖ **Top dressing:**
- ❖ **Ammonium nitrate (34.5%N) - 100kgs/Ha, Split apply at 8 & at 12WAP.**



HERBICIDES

- **Factors to be considered on selecting the right herbicide (s):**
- **Crop** - (Maize, Soya beans, Sugar beans, Cotton, Sorghum, Tobacco) etc.
- **Time of Application** – Pre or post–emergent, Selectivity of the herbicides – selective or non selective, stage of weed and crop.
- **Contact or Systemic.**
- **Field history** - Rotations (Issue of Atrazine).
- **Weed spectrum-** types of weeds in the field – sedges, shamva grass, couch grass.



HERBICIDES

- ❖ **Factors to be considered on selecting the right herbicide (s):**
- ❖ **Tank mixtures** – Covers a wide weed spectrum, improves effectiveness.
- ❖ **Correct dosage** - Label specifications, Agricura crop guides, Consult an Agronomist.
- ❖ **Use of wetter-** rain fastness.
- ❖ **Soil type** – Clay, sand, sandy loam.
- ❖ **Water quality** – Ph, water hardness, clean water.
- ❖ **Soil moisture** – Affects pre-emergent herbicide activity.



PRE-EMERGENT HERBICIDES

- ❖ Pre-Emergent:
- ❖ **Mainly grasses and some broad leaved weeds:**
- ❖ Alachlor/Laso 48EC – 3lt/ha
- ❖ S-Metolachlor/Metolachlor - 0.9–1.9lt/ha
- ❖ Pre – Emergent:
- ❖ **Mainly broad leaved weeds:**
- ❖ Prometryn – 2lt/ha – Pre-emergent to weeds & crop or **Early post-emergent directed.**
- ❖ Cottogard 500SC – Pre-emergent to weeds and crop.



PRE-EMERGENT HERBICIDE TANK MIXTURES

- ❖ **Grasses & Broad Leaved Weeds:**
- ❖ Alachlor/Laso + Prometryn
- ❖ Alachlor/Laso + Cottogard



POST-EMERGENT HERBICIDES

- ❖ Ametryn 50SC - 2 litres per hectare - post-emergent directed when crop is 300mm tall for grasses & b/l weeds.
- ❖ Terbutryn 50SC - 2-4 litres per hectare - post-emergent directed when crop is 400mm tall for grasses & b/l weeds.
- ❖ Glufosinate ammonium - 1.5 -4 litres per hectare - post emergent directed spray on actively growing weeds (**Non selective herbicide**).
- ❖ Diquat dibromide 20 - 1- 2 litres per hectare - post emergent directed spray on weeds, **DO NOT** spray onto cotton.
- ❖ **GRASSES ONLY** - Agil 100EC - 0.5- 2 litres per hectare - post emergent to annual & perennial grasses, volunteer wheat, barley (**Selective herbicide**).
- ❖ **GRASSES ONLY** - Super Galant - 0.6- 2 litres per hectare - post emergent to annual & perennial grasses, volunteer wheat, barley (**Selective herbicide**).

PLANT HEALTH - PEST MANAGEMENT

❖ **Aphids & Whiteflies**

❖ Acetamiprid 20SP - 34 - 50 grams per hectare - Dependant on plant height (DOPH).

❖ Dimethoate 40EC - 250mls per hectare - Dose DOPH and scouting.

❖ Fipronil 20SC - 500mls per hectare - Band treatment in a 150mm swath over the furrow, cover seed soon.

❖ **Elegant grasshoper**

❖ Carbaryl 85WP - 1.2 kgs per hectare - Dose DOPH. Molasses may be added.

❖ **Heliothis Bollworm**

❖ Avaunt/Steward - 170mls per hectare. Dose DOPH. CRI recommended.

❖ **Leaf eating caterpillars**

❖ Lambda cyhalothrin 5EC - 200mls per hectare. Dose DOPH and scouting. All application methods. CRI recommended.

PLANT HEALTH - PEST MANAGEMENT

❖ **Leaf eaters**

❖ **NB.** Carbaryl 85WP, Decis forte 2.5EC, Fenvalerate 20EC and Lambda cyhalothrin 5EC, will control leaf eaters, using same dosages as on heliothis bollworm.

❖ **Lygus bug**

❖ Dimethoate 40EC - 250mls per hectare. Dose DOPH.

❖ **Red bollworm**

❖ **NB.** Carbaryl, Decis forte, Fenvalerate, Lambda cyhalothrin & Avaunt/Indoxacarb will control Red bollworm using same dosages above e.g on heliothis

❖ **Jassids**

❖ Acetamiprid 20SP - 50grams/hectare. Dose DOPH.

❖ Dimethoate 40EC - 250mls per hectare. Dose DOPH.

PLANT HEALTH - PEST MANAGEMENT

❖ **Red Spider Mites (RSM's).**

- ❖ Abamectin 1.8EC - 400mls per hectare. Dose DOPH.
- ❖ Amitraz/Mitac 20EC - 0.5 -1500mls per hectare. Dose DOPH.
- ❖ Dicofol 18.5EC - 1100mls per hectare. Dose DOPH.
- ❖ Dimethoate 40EC - 250mls per hectare. Non resistant red spider mites only.

❖ **Spiny bollworms**

- ❖ **N.B** Refer to information on Red Bollworm, in terms of which products to use and dosage rates.

❖ **Cotton stainers**

- ❖ **N.B** Refer to information on Red Bollworm, in terms of which products to use and dosage rates, leave only Avaunt from the list and replace it with Dimethoate.

❖ **Termites**

- ❖ Fipronil 20SC - 400mls per hectare - Apply to 50kgs of seed, rotate for good cover, spray in band over furrow & cover seeds.

PLANT HEALTH - PEST MANAGEMENT

- ❖ Imidacloprid - 1 litre per hectare. Dose DOPH, Furrow treatment, apply over seed before covering.
- ❖ **Seed borne diseases**
- ❖ Thiram 80WP - 75grams/50kgs of seed. Seed dressing treatment
- ❖ **Defoliants**
- ❖ Ethephon/Etherel - 100 - 200 litres per hectare. Ground application, apply when last reappable boll has reached physiological maturity.
- ❖ **Nematodes**
- ❖ Carbofuran/Curater 20kgs per hectare. Apply 200grms/100m row in furrow, will also control aphids and jassids.

Basic Agronomic Calculations:

- ❖ 1 hectare i.e. **100m * 100m = 10 000** square metres = **2.47acres**.
- ❖ Volume of water to be used per hectare = **200 – 250 litres per hectare (Herbicides)**
- ❖ Volume of water to be used per hectare = **200 – 500 litres per hectare (Insecticides, Fungicides)** depending on quite a number of factors.
- ❖ Normally agrochemicals application rates are expressed per 100 litres of water yet small scale farmers are mostly interested on **dose rates per 15/16 litres of water** – Knapsack hence the need to calculate.
- ❖ Normally we need **12.5 * 16lt** knapsack per hectare or **14 * 15lt** knapsack per hectare.



Thank you so much!!!

