

How to fertilize coconut groves

I. Smallholdings

INTRODUCTION

It is estimated that at present less than 1 p. 100 of the world's coconut groves are regularly fertilized. This is paradoxical because at most sites, fertilization has proved to be economically profitable. This state of affairs results from the very difficult financial situation of small plantations, which make up most of the surfaces planted with coconut. It is also found that the purchase and distribution of mineral fertilizers is rarely organized on a national scale, and that the planter does not always receive technical assistance likely to help him in choosing the rates to apply, spreading dates and the most appropriate methods of application.

The objective of this advice note is to help small planters to make their fertilizer treatments more profitable. This will be followed by another which will concentrate on industrial plantations.

I. — HOW TO DETERMINE THE RATES

The amount of fertilizer necessary per tree depends on :

- the plant's age,
- soil quality,
- the planting material.

This amount should be determined by specialized agronomists, from experiment results, soil analyses and periodic leaf analyses, which enable the tree's nutrient status to be followed. During the first two years, a theoretical schedule is applied, which is then adapted to each particular case according to visual observation and the leaf analysis results.

However, the planter should know that certain crop practices help to reduce fertilizer needs, notably :

- leaving the leaves and husks in the grove ; this will restore to the soil about 2/3 of the K and Cl used by the tree ;
- sowing and maintenance of a legume cover which contributes to nutrition in N.

II. — FERTILIZER APPLICATION DATES

To be well assimilated, fertilizers should be applied during a humid period. However, they should not be given just before periods of heavy rain, so as to limit element losses through leaching.

In practice, when the young trees are in their 1st. and 2 nd. years, the annual manuring is split into two instalments ; afterwards, there is one yearly dressing.

In West Africa for example, where there are two rainy seasons, young coconuts are fertilized just before or at the very beginning of each rainy season (April and August). Older trees are only manured in August before the short rainy season.

III. — HOW TO PREPARE THE FERTILIZER CAMPAIGN

1. — Tree inventory.

The total amount of fertilizer to be purchased depends on the number of trees planted. The planter should thus regularly update his inventory and this by planting year. According to recommendations and rates per tree, the planter can calculate campaign needs with precision.

2. — Preparing the measuring tins.

Old metal tins (tin cans, milk tins...) can be used. The level corresponding to the rate is marked on the tin which is then cut at

this mark, so that one measure filled to the brim corresponds to a given quantity. There should be one tin for each rate and for each fertilizer used.

3. — Orders, deliveries and storage.

Fertilizer orders are made as soon as the total quantities necessary are known. They should be made early so that delivery can take place at the start of the campaign. If this is done, fertilizer storage is not a problem ; the bags can be delivered to the field gate, piled one on top of the other and covered with a plastic sheet, after which should be used quickly.

4. — Cleaning the circles.

Before the fertilizer campaign begins, the circles are cleared so that all the fertilizer profits the coconut itself.

IV. — SPREADING TECHNIQUES

Generally, spreading is entirely manual.

1. — Where to spread.

The fertilizer is uniformly spread over the entire circle. For young coconuts, circle size is variable, its radius being determined by the perpendicular of the horizontal fronds. For adult trees, the spreading radius is 2-2.50 m.

2. — Spreading.

Very often, several single fertilizers are applied, for example, urea, potassium chloride and magnesium sulphate. In this case, the planter can make several rounds, one for each type. It is also possible to mix them beforehand on a clean cement area. The first method, the simplest, is less risky, especially since certain fertilizers should not be mixed together (ammonium sulphate and phosphate for example). The carrying bucket, or plastic bowl is simply filled with the product to be spread along the row, and at each tree, one or more tin-fulls are taken out and then spread carefully (Fig. 1).

When it is possible to determine fertilizer formulae for large ecological zones, fertilizer manufacturers can commercialize corresponding compound fertilizers, which eases spreading problems.

3. — Fertilizer quality.

Fertilizer should be really dry, so the bags must only be opened when they are about to be used. If the fertilizer has lumped, it must be carefully crumbled before use.

V. — SPREADING REPORT

It is advisable to verify the accuracy of the measuring-tins during the campaign. This is easily done by using the contents of one bag of fertilizer as a basis (e.g., a 50-kg bag should fertilize 100 trees, at the rate of 500 g per tree).

At the end of the campaign, the planter should carefully note the number of bags used per type of fertilizer and the spreading dates (Fig. 2). He should let the monitor know of any difference between the estimated quantity and the amount really applied (number of bags left over, or unfertilized trees).

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