

Establishing a successful crop of maize: What you need to know

by Seed Co Agronomy



The results speak for themselves

The summer of the 2019/20 farming season is here, and this particular one meets a time when maize production is making rounds not only amongst people in the crop production sector in Zambia. Many people who use maize for food and livestock feed in this country and beyond are also ardent maize planters.

Maize is, as a matter of fact, the world's most cultivated grain, and with the recent effects of climate change manifesting itself as drought/floods and an influx of pests like the fall army worm, maize crop production has been affected in more ways than one.

These factors range from increased cost of production, owing to the added cost of pest control, to reduced production and productivity per unit area, particularly for Zambia. In the recent past, Zambian farmers recorded averages of more than 2 tonnes per hectare, compared to last season's 1,47 tonnes as reported by the Central Statistics Office and Ministry of Agriculture.



Neat rows of young, maize plants with compliments of Seed Co.

The shortage of this commodity on the market is a regional problem, and with predictions of a better rainfall season in Zambia's 'maize belt', the people at Seed Co have decided to empower their farmers with this two article series to get the most out of this season.

Together we can move our national average yields upwards with valuable educational information and get to realise ten and fourteen tonnes per hectare yields with our hybrid maize varieties.

Summarised in seven main points, here's what you need to know and do in order to establish a crop of maize successfully.

Cultivar selection

Seed Co is known as The Home of Bumper Harvests, because our 80 years in the seed breeding business have brought forth a basket of hybrid varieties that stood the test of time and continues to so, with some varieties producing yields as high as 22 tonnes per hectare in trials. Seed Co is also home to the SC 727, Africa's highest yielding hybrid maize variety.

A farmer only needs to try out one of Seed Co's varieties as recommended by their dedicated team of agronomists, and he will experience what Seed Co means when they say "Bumper harvests start with the right seed."

Choice of variety is a very important factor when it comes to crop establishment.

Seed Co's agronomists will guide the farmer on the aspects of the potential of his area, and how specific varieties of maize perform in the area.

Seed Co's basket contains Zambia's



Seed Co's SC 727.

widest range of maize cultivars, starting from ultra-early maturing varieties through to very early, early, medium and late maturing varieties.

Their emphasis on seed quality is another aspect appreciated by customers, as they know they can rely on germinate and vigorous growth to attain abundant yields.



Seed Co maize grow vigorously to ensure high yields.

Site selection

Maize roots may grow as deep as its height, provided the soil where it is planted is deep enough and without restricting layers. When a farmer plants high-yielding maize hybrid seed, it is important to note that establishing it in a soil that has restricting layers can

take away as much as 35 to 50 percent of potential yields. Two types of restricting layers that prevent maize roots from penetrating deeply into the soil and reaching for the much-needed water and nutrients are:

Physical layers

Physical layers that restrict root penetration include naturally occurring ones such as a subsoil rock, and some man-made layers of soil compaction such as plough pans. Grazed fields can also have some compaction due to animal traffic. One of the surest ways to determine whether a field has high potential physically, is to dig profile pits in selected sections of the field. Profile pits show us how deep the soil is, and also reveal the subsoil structure. Compaction pans can be broken by ripping or subsoiling. For fields with soils deeper than a metre, we strongly recommend ripping, at least after every three crops, so that both water drainage and root penetration are supported.



Ensure that the physical layer of soil is broken to allow deep root penetration.

your maize crop, select a field without the aforementioned restrictions to root penetration, in addition to the fact that the soil must be very well aerated with appreciable amounts of humus in the top layer. Fields with deep, loamy soils have proved to establish maize crops the best.

Land preparation (cultivation)

The action of engaging soil cultivating tools and equipment for the purpose of preparing a field for crop planting is what is loosely referred to as land preparation. Depending on whether the farmer decides to use conventional ploughing or minimum tillage, it is critical that the seedbed (planting rows) is without heavy clods or crop residue that may restrict the germinating plant from emerging from the soil, or injure it as it emerges. Achieving a final till without things such as soil caking (which results in water-logging and soil-crusting, especially on silty soils) and heavy soil clods can lead to uniform crop emergence, which is critical in crop establishment.

Dates of planting

Like any other crop, maize has its seasons when it performs well in Zambia, and that is the summer, during our rainfall season. With the dynamics of the impact of soil temperature on the microbial activity of the soil, however, the maize crops that are most successful are those planted with the first proper rainfall. The best window is in the month of November, with dates set according to when an area receives its effective rainfall.

Farmers who can establish their crop with supplemental irrigation can go in as early as the last week of October, especially with long season varieties such as SC 727 and SC 719, or with medium and early varieties that they would want to dry artificially and market early. Early planting establishes a crop that is guaranteed to make maximum use of heat units and give good yields.



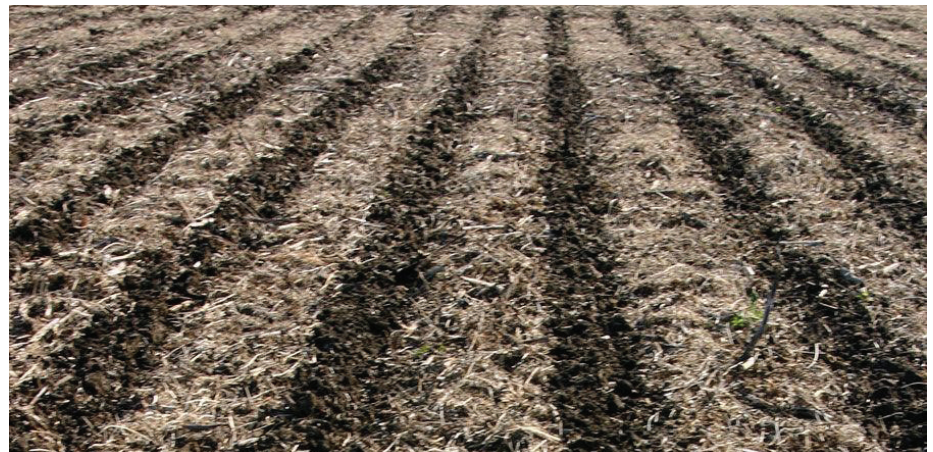
Seed Co's SC 719.

For more information, contact Adrian.chibanga@seedcogroup.com, or visit their website at www.seedcogroup.com/zm.

The chemical layer

A chemical layer can restrict root penetration due to the acidity of a soil. Maize performs better on pH ranges between 5,5 and 6,8. Any soil that shows pH levels below 5 will make maize root penetration very difficult. Topsoil acidity levels of 4 and below in particular, will affect maize crop establishment as it hampers root development. Soil analysis is a critical starting point for ascertaining the pH levels of the soil, and doing it early before the planting season can help as a management tool for planning the correctional application of lime and other soil amelioration recommendations.

It is therefore strongly recommended that if you are targeting high yields for



Efficient land preparation.