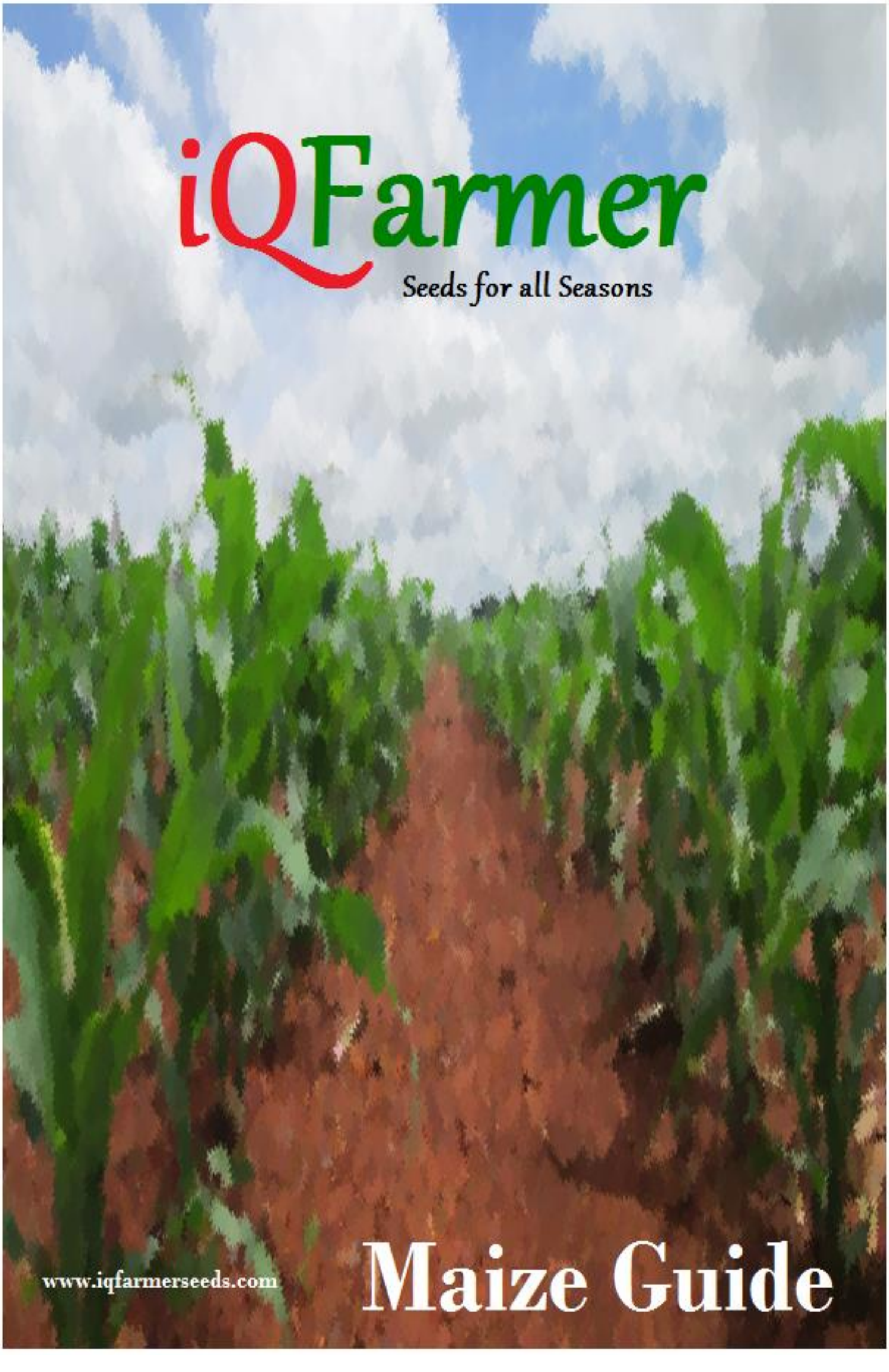


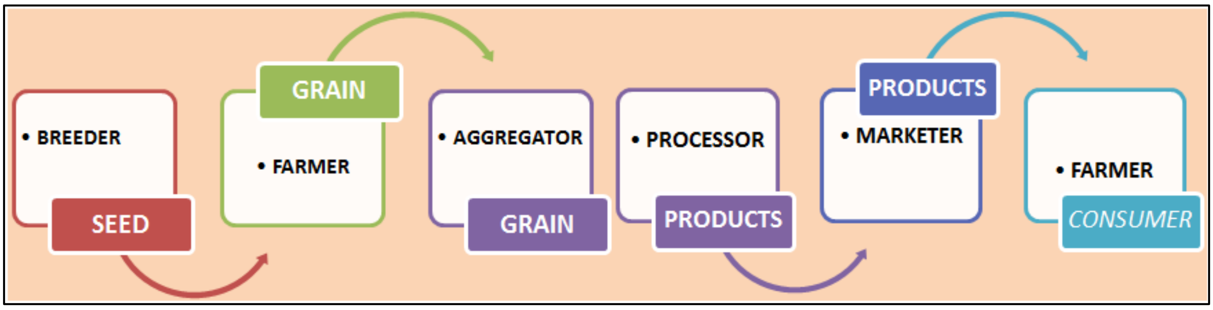
iQFarmer

Seeds for all Seasons

Maize Guide

www.iqfarmerseeds.com

Value Chain Map



SOIL TYPE AND LAND PREPARATION

Deep tilled loam soils with good drainage. However other types of soils are also able to sustain maize, depending on an array of management and climatic factors under the farmer's employment. Ploughing is not recommended for soils and terrains that are prone to soil erosion.

PLANTING METHOD

This depends on the type of agriculture method in use but generally, farmers may plant seed into tilled soils (conventional tillage) or directly drill into untilled land (minimum or no-till). The farmer must ensure that their planting method offers the best chance of germination to the seed by covering with just enough soil that does not cap when wetted, and pressing or just firming (but not compacting) on top of the seed bed to facilitate optimum seed/soil contact, which is ideal for germination. It is best to plant when the soil moisture and temperature will promote optimum germination and initial growth.

SEED

On average, farmers plant 25kg of treated seed per hectare, making sure that they plant the best variety to fulfil their market, yield and local environmental requirements. Farmers must retain the tags attached to their seed packets for traceability purposes, where in the event of failed germinations or other lack of performance which can be attributed to the seed manufacturer, it is possible to trace the seller of the seed, the processing batch number and even the farmer who was contracted by the seed company to grow that seed.

Planting must be done at the right time to capture the best growing conditions, as well as to minimise pests and diseases.

PRODUCTION CULTURE

Conventional or conservative (minimum or no-till). We do not recommend Zero till for our maize varieties.

VARIETIES

At iQFarmer **Seeds** we pride ourselves in producing quality tested seeds to ensure maximum yields and returns for our farmers.

Our current maize varieties comprise of some OPVs (open pollinated varieties) already on the market (**ZM309, ZM521**), whose difference will be found in the seed quality, and some new hybrid products which have been designed and bred to deliver consistently satisfactory yields under different and difficult growing conditions (**ZS275, ZS248A**).
Before selecting any of our varieties, farmers take into account the target market, desired yield, production system and weather conditions, product requirements or use, such as green mealies, stock feed, mealie meal, meal rice, flour or malting (thereby influencing whether one chooses a dent or flint variety of specific colour, which may be white, yellow, or orange).
Some of our new varieties have been bred through **biofortification** to suit specific growing regions and climates, as well as to be able to deliver specific nutritional requirements into human and livestock diets, such as our Pro-Vitamin A Orange Maize (ZS248A) for delivering vitamin A, over and above what ordinary white and yellow maize varieties can provide.

Variety choice therefore depends on

- Potential yield and yield stability
- Stress tolerance (water, heat, cold, nutritional)
- Prolificacy/cob number
- Lodging/standability
- Intended use
- Maturity dates,
- Adaptability,
- Resistances and tolerances,
- Colour
- Quality (physical and storage)
- Nutrition levels

GOOD ROTATIONS

Leaf vegetables, legumes, cucurbits, potatoes

BAD ROTATIONS

Cereals and grasses

SOIL PH

5.5-6.8

Lime should be added the year before growing the maize crop to correct soils with a high pH.

DISEASES

DISEASE	REMEDY	NOTES
Blights		
Root Rot		
Cob Rot		
Fusarium		
Maize Streak Virus		
Grey Leaf Spot		
Stem Smut		
Loose Smut		
Glume Blotch		

PESTS

PEST	REMEDY	NOTES
Mice		
Birds		
Nematodes		
Cutworm		
Aphids		
Hoppers		
African Army Worm		
Boll Worm		
Fall Army Worm		
Stalk Borer		

WEEDS

Weeds will compete with crops for water and nutrition, while harbouring pests and diseases. Keep them below the threshold levels.

Common weeds in your crop must be controlled using registered chemicals from registered and licenced suppliers. Shallow manual or mechanical weeders may also be used to support your weed control programs under the conventional farming system.

Pre-emergent and post-emergent herbicides are available from different companies and farmers must select herbicides contingent with the types of weeds they face on their farms. Apply these in line with the recommendations from your agronomist (do not mix agronomy advice from different agronomists or companies).

NUTRITION

Maize needs nitrogen, phosphorus and potassium plus a host of other micro nutrients.

REFER TO YOUR SOIL TESTS FOR APPLICATION RATES

Most farmers start off their maize with Compound D, although other variations are now available through different companies.

It is critical to link your soil tests to the available basal and top dressing (usually Ammonium Nitrate and/or Urea), while consulting your agronomist.

Provisional fertiliser application guideline:

MAIZE	**Comp D**	**Manure**	**AN**	**Urea**
Rate (kg/ha)	300	1,000	250	200-250 MD
Application	100%	100%	Split	Split
Stage	Planting	Pre-plant	3 & 6 WAE	3 & 6 WAE

** MD: Moisture Dependent

WAE: Weeks After Emergence

POPULATION/HA

Up to 55, 0000 plants per hectare, depending on your variety and production regimes, with some people now preferring high populations and high feeding and irrigation regimes.

POTENTIAL YIELD

Tonnages will range depending on cultivar, production system and irrigation and feeding regimes, although some farmers have mastered the various input combinations to now hit from 10 up to 20 tons per hectare under irrigation; and 3 to 5 tons under dryland conditions.

IRRIGATION

Depending on the prevailing weather, available equipment and water, farmers are advised to do strict scheduling to just keep their field moisture levels optimum for their crop's growth. Matching the variety to the region's weather pattern will go a long way in also managing the supplementary irrigation costs, for rainy season crops.

Physical examination or the use of sensors in the field to verify the soil's moisture levels is recommended.

Irrigation can be effected using one of many methods, which include flood, drip, and sprinkler systems (conventional sprinklers, drag hose, mobile and fixed pivots). Conservation farming will also enable the reduction of water loss, further reducing irrigation costs and increasing the chances of achieving potential yields.

TEMPERATURE

23 to 30^0C

Some modern varieties are now being bred for heat stress tolerance, as well as production under low heat unit conditions, in winter.

DAYS TO HARVEST

Up to 115-140 days, although some varieties may be earlier or later, depending on the available heat units, variety characteristics and management regimes in use. Our iQFarmer Seeds varieties have been bred to deliver highly competitive yields under stressful climatic conditions, within the shortest possible times.

HARVESTING AND HANDLING

All the processes from planting right up to the delivery of finished product are prepared for when the entire enterprise plan is drafted.

iQFarmers plan for their harvest and post-harvest activities right from the beginning and then implement them in good time. Equipment preparation and calibration are done well before harvesting, as well as the preparation of drying equipment, procurement of packaging or bagging equipment and materials, as well as handling and transport arrangements.

GRADING AND STORAGE

Immature, undersized, damaged, and overly latex stained fruits are sorted from clean fruits. Fruits are then graded as to the variety, size, weight, or diameter. The fruits are packed in bamboo baskets or crates lined with newspapers for protection during transport. Mangoes are stored at 9 to 10 degrees Centigrade. At this temperature, ripe mangoes may be stored for 18 to 21 days and freshly matured fruits for 23 to 26 days.

MAIZE USES

- Grain for cash and home consumption
- Stock feed (silage and hay)
- Green mealies
- Variation based uses (sweet corn, popcorn, baby corn, etc.)
- Biofuel

CONSERVATIVE TILLAGE PRACTICES

Maize can be produced under various forms of conservation farming and farmers are encouraged to evaluate the short and long term options and benefits, including direct drilling, mulching (stover and polymer), strip tillage, ridge planting, zone tillage, crop rotation, intercropping and zero tillage.

Do not leave plain maize stover lying in the field as this will encourage erosion during the rain. Plant an immediate follow-on crop, especially after harvesting in-season silage.

CLIMATE SMART AGRICULTURE

Our varieties are adapted to different climates and matching variety or cultivar to climate is the first step towards building resilience, through which production, profitability and sustainability are possible in the face of climate change challenges.

Select the cultivar that best matches your regional climate/s, markets, resources, and projected weather changes over the growing period.

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