

# Novaculture

Technical journal on vegetable seeds

N°40

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## SOON IN YOUR STORES! MALKAL TOMATO !



**MALKAL  
Tomato**

Discover MALKAL: a new round tomato for the rainy season!

MALKAL is similar to MONGAL, with a slightly larger size and a clear gain in firmness and earliness. It is also the new generation of MONGAL thanks to its TYLCV tolerance, which is an asset against transmission of the virus by whitefly.

It also offers good field performance thanks to its tolerance to fusarium wilt (Fol.0,1) and TMV (tobacco mosaic virus).

Trials of the variety are under way with pilot growers to help them discover it.

Ready to try MALKAL?  
Request your samples!

Marion PEREZ  
Solanaceae Product Manager,  
TECHNISEM France

## NUTRIENT REQUIREMENTS OF CUCUMBERS

Cucumber: *Cucumis sativus* from its scientific name belongs to the Cucurbitaceae family. The plant, which grew naturally at the foot of the Himalayas, was first domesticated in India at least 3,000 years ago.

It is a creeping, herbaceous annual plant.

For its floral biology, we generally note monoecious plants: on the same plant we find male and female flowers but there are gynoeceous varieties: predominantly female flowering.

The stem can reach 2-3 meters and even more, some with ramifications.

The roots are traceable, very fine, there is sometimes formation of adventitious roots; the roots are even deeper when the soil is humus.

Among cucumbers, there are various varieties grown around the world, including: bicolor, white, Dutch, pickling, Japanese, Beit alpha cucumbers, etc.

However, it should be noted that the pickle and the cucumber have the same origin but the varieties are different.

Fertilizing cucumber crops first requires good soil preparation and a controlled supply of nutrients throughout the cycle.

So when making sowing holes: bury the bottom manure + 120 kg of N/ha + 100 kg P<sub>2</sub>O<sub>5</sub>/ha + 200 kg K<sub>2</sub>O/ha.

For cover, add 30 kg N/ha + 20 kg P<sub>2</sub>O<sub>5</sub>/ha + 50 kg K<sub>2</sub>O/ha for vegetation.

At the flowering stage: add 3 to 4 T/ha of manure as a cover.

It is recommended to make contributions just after each harvest. This allows you to maintain a good harvest rate and thus better optimize your yield.

Ousseynou FAYE,  
Junior Cucumber Breeder  
TROPICASEM Station, Senegal

### All Technisem's know-how in your pocket.

- Surface area calculator by species
- Help with variety selection
- Technical tips and tricks
- List of sales outlets
- Catalog access

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## HOW CAN SOIL FERTILITY BE IMPROVED?

Soil fertility can be defined as its capacity to supply nutrients to support plant growth as required. This capacity is linked to the physico-chemical and biological characteristics of the soil. The relationship between these characteristics will therefore make it possible to establish a soil fertility situation depending on the crop envisaged. Soil fertility is not a fixed parameter, but a dynamic parameter that changes over time, with the use of the soil and the crops to be grown.

### Why improve soil fertility?

The soil is full of nutrients that are taken up by the plant during each crop cycle; these nutrients are available irregularly and sometimes in insufficient quantities to meet the plant's needs. Sometimes, when they are present, the balances that exist between them will not allow them to be absorbed, or the nature of the aggregates that form the soil will not allow them to be retained in sufficient quantities for the needs of a given crop. It is therefore necessary to improve the soil to create the optimum conditions for these nutrients to be available.

### How can soil fertility be improved?

The first step in improving soil fertility is to diagnose its physical, chemical and biological characteristics.

More specifically, this involves defining the concentrations of nutrients (N, P, K, Ca, Na, Mg, etc.), the ratios between them, the soil pH (which affects the availability of these elements), the proportions of organic matter and the proportions of the aggregates that make it up. Once the diagnosis has been made, all that remains is to identify the areas for improvement and the method(s) to be adopted. These methods include:

- Adding organic matter to the soil through fertilisation, cover crops, burying healthy plant residues and compost;
- Reducing tillage operations that destroy soil structure;
- Adding nutrients in the form of chemical fertilisers in micro-doses;
- Calcium carbonate in the form of lime to raise the soil pH;
- The use of appropriate cultivation methods (to encourage the infiltration of water and air into the soil, etc...);
- The use of mycorrhizae to promote the absorption of nutrients by plants.

It should be noted that Novalliance offers soil diagnosis via its TerraLab service and a whole range of appropriate soil improvement products through its JARDINOVA brand.



### Which Agricultural Practices Preserve Soil Biodiversity?

Soil biodiversity is essential for maintaining agricultural ecosystems and crop health. Soils host a multitude of living organisms, such as bacteria, fungi, earthworms, and insects, that play a crucial role in decomposing organic matter, fixing nitrogen, and degrading pollutants.

However, intensive farming practices can harm this biodiversity. Here are some agricultural practices that help preserve and promote soil biodiversity.

1. Crop rotation: this practice involves alternating crops from year to year on the same plot. Crop rotation helps break the life cycles of pests and diseases specific to a plant, reducing the need for pesticides. Additionally, it improves soil structure and promotes microbial diversity.

2. No-till farming: deep plowing can disrupt mycorrhizal networks and soil structure. Adopting no-till or minimal tillage practices helps preserve the habitats of soil organisms. It also reduces erosion and improves water retention.

3. Agroforestry: integrating trees and shrubs into agricultural systems offers several benefits.

The deep roots of trees contribute to soil stability and carbon sequestration while providing habitats for flora and fauna.

4. Cover cropping: these crops, planted between main production cycles, protect the soil from erosion, increase organic matter, and stimulate microbial activity. Legumes, for example, enrich the soil with nitrogen, fostering a healthy biodiversity.

5. Input management: using organic fertilizers and limiting the use of chemical pesticides maintains an environment conducive to beneficial soil organisms. Composts and green manures are good alternatives for naturally enriching the soil.

6. Grass strips and hedgerows: non-cultivated areas like grass strips and hedgerows serve as refuges for many organisms. They promote pollination and biological control of pests.

7. Organic matter conservation: maintaining a layer of organic matter on the soil surface through mulching or returning crop residues improves soil structure and feeds microorganisms.



Soil organisms (earthworms and centipedes)

Blandine AMAGAT  
Product Manager Roots and Cabbage,  
TECHNISEM, France





## Testimony

Farmer in NDOKK,  
Touba commune, Mr BA  
Senegal

I've been growing lettuce, tomatoes and hot pepper for years in Senegal. I found out about TROPICASEM through another grower who told me a lot about the quality of your products.

Just recently, I had the opportunity to test the BALLA hot pepper, which gave me enormous satisfaction because of its productivity, the color of its light green, smooth and red fruits when ripe, and its earliness. It flowers at 1 month 20 days after transplanting and starts to bear fruit 15 days after flowering. In addition, the market appreciates the new BALLA variety for its fragrance, its resemblance to Bombardier+ and, above all, its shelf life.

The technical support of our sales people and developers has enabled us to improve our yields and choose our seeds carefully.

In my opinion, the field trials carried out by the developers remain an asset for TROPICASEM, as they enable us to get to know the new varieties and benefit from their advice.



Nathan Lambert, Regional Developer  
AGRIVISION Cameroon

## Flea beetle

*(Nisotra dilecta, Podagrixina decolorata)*

It is a beetle that bites leaves from the lower side. Eggs are laid in the soil, near attacked plants. Larvae feed from roots. Damage are mostly serious on seedlings. Podagrica spp. is considered as an Okra *Mosaic Virus*.



*Podagrixina decolorata*

## Symptoms and damage



Lots of little holes  
on leaves.

Attacks could  
occur on fruits,  
which lead to  
appearance  
of rot.

## Damage prevention

- Observe plants at crop beginning to identify first fleas.
- Avoid to grow okra near others Malvaceae as sorrel bissap or cotton plant.
- Plough the soil 30 to 40 cm deep in dry season to expose larvae to sun and predators.
- Weed the crop.
- Apply insecticide at insects appearance during first crop stages

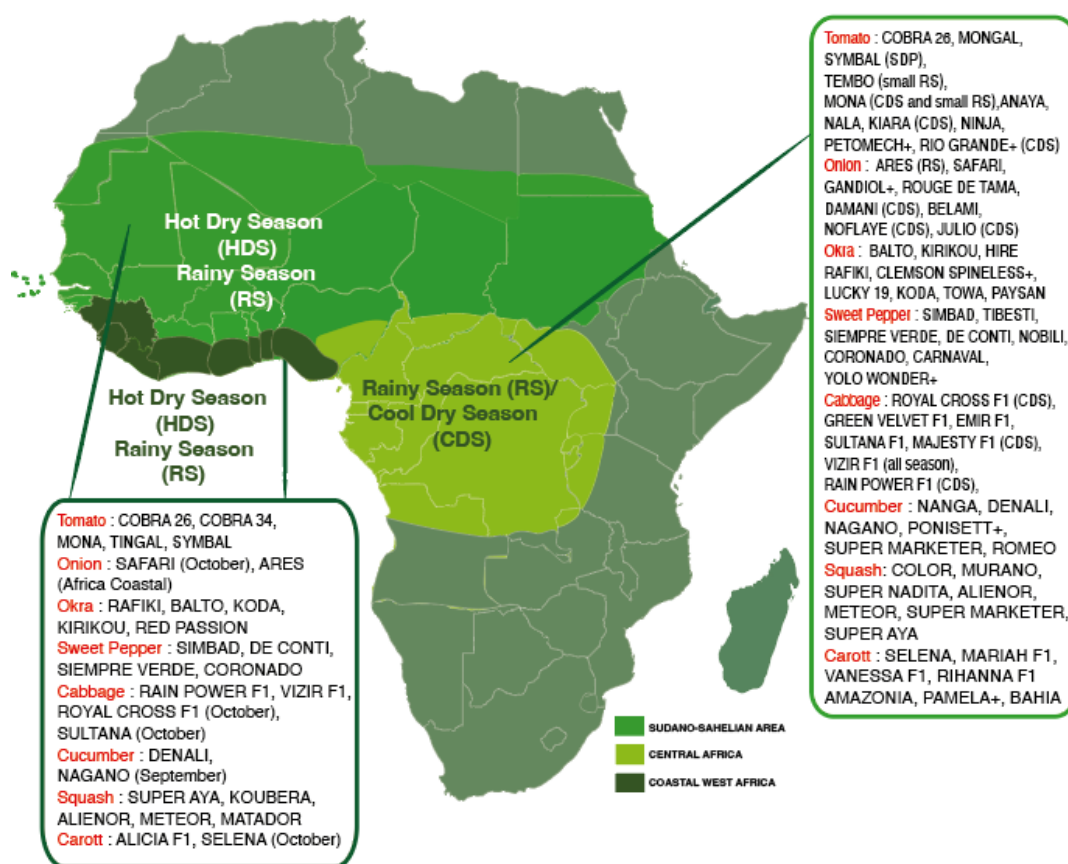
Information from the practical guide created by Technisem



## Recommended varieties for the next two months according to geographical areas\*

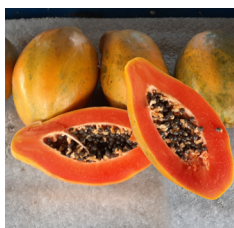
Below are several varieties offered by TECHNISEM for sowing in three defined areas. These tips are valid for the following months: august, september, october.

The team of Regional Developers based in Africa and product managers TECHNISEM, France



«Geographical areas: Sudano-Sahelian area (Cabo Verde, Senegal, Mauritania, Mali, Northern Côte d'Ivoire, Northern Ghana, Northern Togo, Northern Benin, Burkina Faso, Niger, Northern Nigeria, Sudan), Coastal West Africa Area (Southern Côte d'Ivoire, Southern Ghana, Southern Benin, Togo, Guinea Conakry, Liberia, Sierra Leone, Guinea Bissau), Central Africa area (Congo, Cameroon, Southern Nigeria, Gabon, DRC, Rwanda)»

## THE HIGHLIGHT OF THE SEASON



**KOMOA**  
Papaya

### For the SOUDANO SAHELIAN AREA

« Let's try our favorite variety! »

KOMOA is a variety with good vegetative development, about 7 months early. It is productive and has good tolerance to Phytophthora.