

Novaculture

Technical journal on vegetable seeds

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SOON IN YOUR STORES! CUCUMBER TANAGA !



**Cucumber
TANAGA**

TANAGA: your new ally for wet seasons!

The TANAGA cucumber is a very vigorous slicing cucumber adapted to wet seasons, thanks to its tolerance to powdery mildew, CMV and ZYMV. Its earliness after transplanting is around 40 days.

TANAGA fruits are cylindrical, spiny, dark green and uniform, between 21 and 23 cm long.

Emma KERDU, Cucurbits Product Manager,
TECHNISEM France

EXPLORATION OF NUTRITIONAL PROFILES OF AFRICAN LEAFY VEGETABLES (ALVS)

In the realm of nutrition, the diversity of vegetables offers a field ripe with potential, particularly for African Leafy Vegetables (ALVs). A meticulous analysis of nutrient contents reveals significant differences among species, thus providing intriguing avenues for balanced and diversified diets.

For instance, amaranth stands out with its remarkable concentration of proteins, surpassing other sources such as dairy products by far. Similarly, Gambian spinach and African basil Tadjji emerge as promising sources of Vitamin C, rivalling citrus fruits.

Various types of bissap also draw attention, offering high levels of magnesium and potassium, elements often sought for their contributions to proper bodily functions.

It is often the lesser-known vegetables that harbor the most intriguing surprises. Toothache plant, for example, shine with their rich fiber content, highlighting their potential for improving digestive health.

Moringa and black nightshade emerge as nutritional champions, offering an impressive array of nutrients, from Vitamin A to iron and calcium. Their potential to address nutritional gaps in human diets is undeniable.

Lastly, although less publicized, vernonia deserves particular attention for its high concentrations of Vitamin C, calcium, and iron.

This brief overview underscores the importance of dietary diversity for optimal nutrition. By harnessing the nutritional riches of vegetables, it is possible to address the complex needs of the body and promote a healthy and balanced lifestyle.

For further information, you can consult the ALV booklet available in stores.

Kevin CARTELIER,
Coordinator of the PAPAYE & VEG.
breeding programs
NOVA GENETIC, France

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HOW TO SOW CARROTS SUCCESSFULLY?

- **Climate conditions:** the plant is best grown in cool seasons. The optimum temperature for seed germination is 18°C, with a minimum of 7°C. For optimum growth, the temperature should be between 20 and 27°C.
- **Soil:** the crop is not demanding in terms of soil quality. However, stony soil should be avoided in order to obtain roots that are not forked. The ideal soil is a deep draining sandy loam. Carrots do not tolerate salinity and acidity in the soil and watering. The optimum soil pH is between 6.5 and 7. Do not return to the same plot for less than 4 years.
- **Sowing:** sowing should be as shallow and even as possible. It will be between 0.5 and 2 cm depending on the sowing season (deeper sowing during the rainy season) and the nature of the soil (deeper sowing in light soil).

The quantity of carrot seeds needed to sow 1m² is 0.7g. The row spacing is 15 to 25cm depending on the type (15cm for short varieties, 25cm for long varieties).

To make sowing easier, the seeds can be mixed with fine sand; compost is not recommended as it dries out the soil.

- **Mounding:** heavy or uneven soil may need to be ridged. Mounding allows seeds to be sown in a lighter, raised area of soil that is sheltered from excess water.

The roots will grow to the full height of the mound, which should therefore be around 30cm high.

- **Thinning:** after emergence, as soon as the plants have 2 to 3 leaves, the first thinning should be carried out to obtain a spacing of 4 to 5 cm between the plants. This operation should be repeated 10 to 15 days later.
- **Irrigation:** we recommend watering for the first time a few days before sowing. After sowing, 3 to 6 liters per m² per day are required. Too much water encourages the development of disease and seed rot. Any water deficit will result in yield loss.
- **Fertilization:** carrots don't require much nitrogen, making do with residues from previous crops. For other elements, phosphorus requirements are estimated at 80 to 150 units/ha, potash at 200 to 350 units/ha and magnesium at 10 to 20 units/ha. It is not advisable to apply organic amendments shortly before the crop is grown, as too high a level of organic matter is likely to cause plant health issues.



Carrot nursery

Abdoulaye DIENG, Junior Onion breeder STATION TROPICASEM, Senegal
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4 THE QUESTION OF THE MONTH

How can we differentiate between bacteria, viruses and nematodes to adapt crop treatments?

Viruses are infinitesimally small infectious entities. They manifest themselves by irregular coloration and deformation of the leaves, with aspects of reduced size, embossing or blistering, necrosis and yellowing. Most vectors are insects, mainly biting and sucking insects (aphids, whiteflies, leafhoppers, mealybugs, thrips, etc.), but also mites, fungi and worms.

There are currently no curative treatments for plant viruses; preventive methods are needed, such as the use of resistant and tolerant varieties, elimination of vectors, suppression of weedy host plants, judicious rotation, disinfection of tools and bio-control.

Nematodes are a phylum of roundworms, most of which are phytophagous. The most widespread and damaging species worldwide belong to the *Meloidogyne* genus.

Symptoms include shortened roots with swollen tips, lesions on the roots, cysts or beads on the roots, deformed roots and altered root architecture. Nematodes are very difficult to control.

However, certain cultivation methods can reduce their economic impact through disinfection of tools;

solarization; crop rotation; use of trap plants; bio-fumigation combined with long fallow periods; flooding of infected soils.

Chemical control with nematicidal fumigants and specific nematicides as a preventive measure (Nimguard , Vélum etc.).

Bacteria are microscopic, mostly single-celled organisms. Infection is often passive and accidental. Bacteria can enter the plant through natural openings such as stomata or other pores, but also through wounds and specific insects.

Inside the plant, bacteria produce a multitude of enzymatic compounds which have harmful effects on the plant.

Symptoms include necrosis and burning, oily spots or soft rot, galls or tumors, cankers, etc. The most recurrent species are *Pseudomonas*, *Ralstonia* and *Xanthomonas*.

To prevent the disease, avoid excessive humidity and damage to plant tissue, practice crop rotation, use resistant varieties and chemical disinfection. For chemical control, use bactericides and bacteriostats (e.g. copper).



Carrot nematodes



Bacterial gall on tomatoes



ZYMV virus on zucchini

We summarize for you:

Which vegetables shouldn't be grown together?

In your vegetable garden, certain vegetables can be incompatible, leading to poor growth and limited yields, despite good growing conditions.

Which combinations should be avoided to ensure a healthy, productive vegetable garden?

- Alliums (onions, garlic, leeks, etc.) alongside legumes (beans, peas, etc.): they have similar nutrient requirements.
- Leafy vegetables (lettuce, chicory, etc.) alongside parsley.
- Carrots with beet (even if both are root vegetables) or mint.
- Tomatoes, cucumbers, eggplants, peppers and potatoes should not be planted together, because of their common susceptibility to certain diseases and pests (mildew, etc.).
- Melons should not be planted alongside squash or cucumbers, to avoid cross-breeding.
- Cabbages next to radishes.
- Fennel next to kohlrabi, shallots or beans.
- etc

By following these few tips, you'll boost the growth and yield of your vegetables while minimizing the risk of pests and diseases.

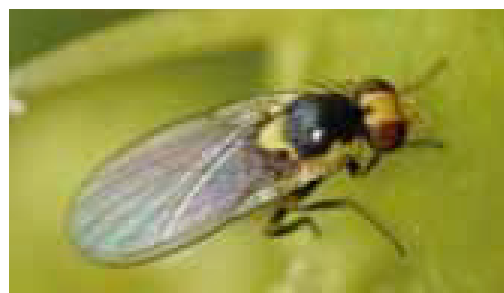


Article published in March 2024: <https://www.lefigaro.fr/garden/which-vegetables-don't-go-together-in-the-garden-20240304>

Leaf miner (*Liriomyza spp.*)

It is a black and yellow fly. It lays eggs in the leaves. Maggots that emerge dig mines on the leaf surface.

Larvae fall out to change into pupae from which will get out the adult. There can be plant loss if the pest attacks at an early stage of the crop.



Symptoms and damage

Presence of white marks on the leaf surface



Damage prevention

- Install insect-proof nets to protect the nursery.
- Spraying repellent substances of garlic, onion or red pepper.
- Apply selective contact insecticide to kill adults and systemic insecticide to kill maggots.
- Perform a shallow ploughing.
- Remove crop residues.

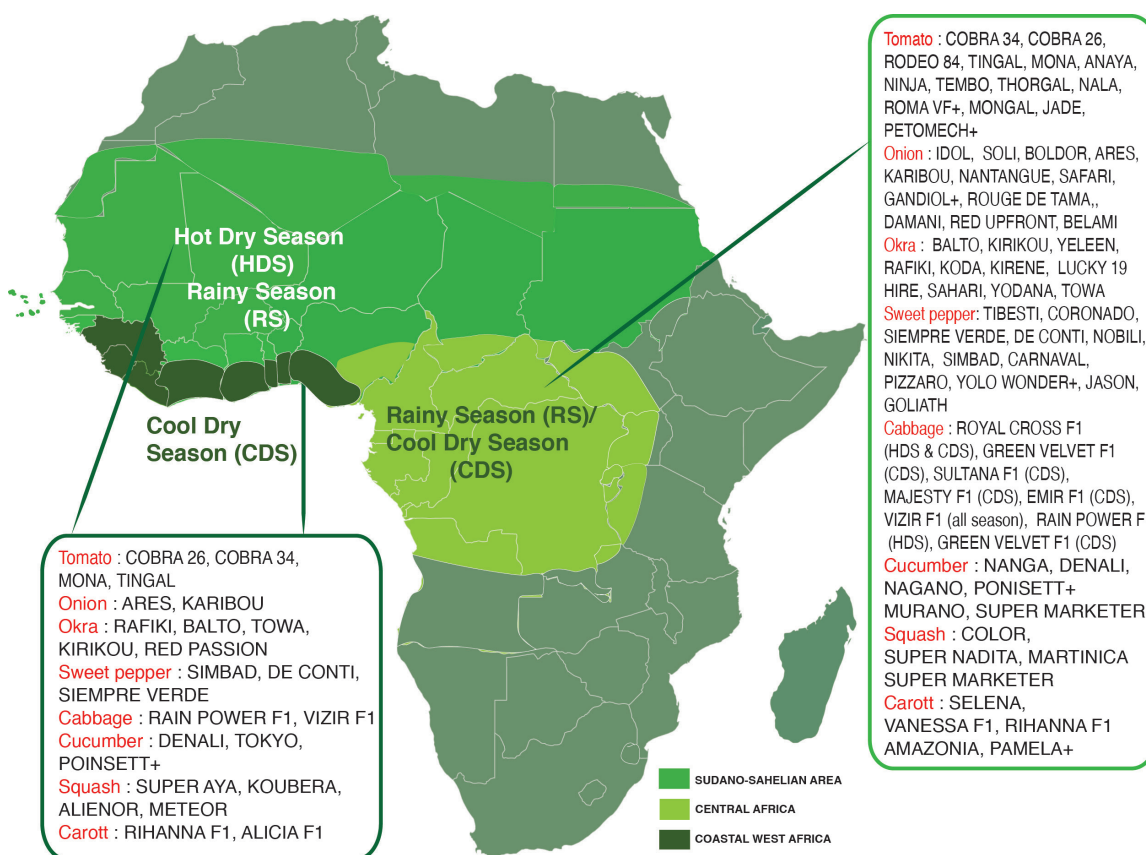
Information from the practical guide created by Technisem



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: June, July, August.

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



**Squash
ALIENOR**

For the **COASTAL AFRICA** area

«Let's try our favorite variety!»

A dark variety, ALIENOR has good vegetative development, a good earliness of 40-45 days and better productivity than COLOR.