



UCI
Universidad para la
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**COSTA RICA
REGENERATIVA**



Associated Crops

There are many possible associations between plants. To know which ones will work best on your plot or farm, it is best to experiment with those that are already recognized for their good results.

You could start by experimenting with some of the following:

Cabbage and Carrot

The cabbage. Two seeds are sown half a centimeter deep in paper pots. When the plant has grown about 3 centimeters, it is transplanted in the pot: separate the mulch and soil on the bed to plant two rows (one on each side of the bed) with 40 centimeters of distance between plants.

The carrot. Carrot seeds are sown directly in the center of the bed. Separate the mulch in order to make a narrow furrow with your finger; spread the seeds in that line; then cover them with little soil. When its leaves have grown about 5 centimeters, it is time to thin them out, leaving only the best plants: one every 8 centimeters.



The smell of cabbage repels flies whose larvae cause damage to carrot roots, while the smell of carrot repels white moths that attack cabbage. Cabbage is harvested any time after it has firmed up. Carrots are harvested when they have reached the desired size.



Corn and Beans

The seeds of both crops are sown directly on the bed.

- Corn is planted in two rows (one on each side of the bed): two seeds in each hole one centimeter deep, with off a distance of 50 centimeters between plants.

It is recommended to cut the stems above the soil after harvesting; leaving the roots in the soil.

- The beans are planted in 2 rows close to the center of the bed, 2 seeds per hole one centimeter deep, every 10 centimeters.

When the pods have dried they are torn from the plant; The plants are then cut to be used as mulch. It is important not to uproot bean plants: their roots will enrich the soil with nitrogen for the next harvest.



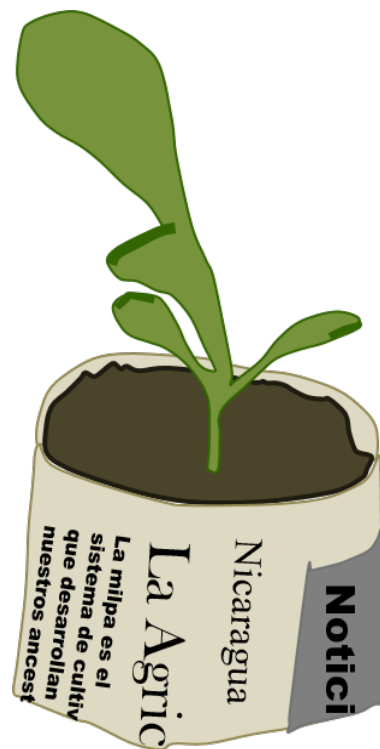
After the last harvest of the year, you can leave the plants on the bed and plant sward beans, velvet beans or other legumes to grow into the dry season. They will produce more organic and enrich the soil of the bed for the next group of crops.

Tomato, Chili (sweet or spicy), Eggplant, Okra and Basil

Start each in pots in the nursery. 2 seeds of any of them are sown one centimeter deep in the pots. Basil seeds are left on the surface and covered with clear plastic to retain moisture.

Tomato can be started in the nursery, long before being transplanted. If they develop long-stems, they will be planted leaving only the upper leaves above the soil surface; This way the stems will produce more roots.

Tomato plants are planted on both sides of the bed with a distance of 50 centimeters between them in the row, and between rows. The basil plants will be planted in a row in the center of the bed; in the center of 4 tomato plants.



In a five meter section of bed, you can plant 8 to 10 tomato plants, which should be attached to stakes or wires that give them support as they grow, in addition to helping them support the weight of the fruits.

Tomatoes are harvested when they are completely red for family consumption, or just before that point if they are to be sold.



- **Chili (sweet or spicy), eggplant or okra.** Any combination of these crops can be planted in the same bed in a similar arrangement to that of tomatoes. It will always be good to plant basil among them.
- **Basil** is planted in the center of each group of 4 chili (sweet or spicy) or tomato plants. The growth ends are cut off as branches grow; This will cause new branches to sprout and the plant to take the shape of a bush.
- **Chili peppers (sweet or hot)** are transplanted when the seedlings already have 6 true leaves or a little before, to ensure that they are productive. They are harvested green or ripe.
- **Musaceae (Plantain, Banana or Guinea) and Sweet Potato/Camote**

Banana offspring (corms) are planted in the center of the bed, leaving between 80 centimeters and one meter of distance between plants.

- **The sweet potato** is planted by 15 centimeter cuttings (cuttings) directly in the bed; each cutting between two banana plants. Their stems are allowed to cover the bed and adjacent ditches. They are harvested by digging at the base of the stems but being careful not to damage the soil of the bed. Lift their vines weekly.





The three sisters

The three sisters is an ancient method of associated cultivation that consists of planting corn, pole beans and squash together (or watermelon or melon)

- The corn is first planted in two rows (one on each side of the bed): two seeds per hole, with a distance of 50 centimeters between plants. When the corn plants have grown 30 centimeters, the beans are planted: 3 bean seeds around each corn plant (about 5 centimeters from the corn).
- When the corn has grown about 60 centimeters, a squash, watermelon or melon plant is planted at each end of the five meter section of bed. As the vines grow, they are trained to develop towards each other and towards the ditch.
- Corn supports beans; beans provide nitrogen to the soil; The squash provides extra shade to the ground.

- Corn can be harvested as miniature cobs, sweetcorn, grain or seed.
- Pole beans produce a good/long harvest. The young pods are harvested, or allowed to mature and dry for grain or seed.
- The squash is harvested young with the skin still soft, or it is left to mature until the skin hardens.

It is recommended not to use large-leaved varieties of pumpkin or squash, as they can climb over the corn and cover it, in addition to providing a lot of shade for the beans. The 3 sisters practice also works well with sunflower or sorghum instead of corn and watermelon or melon instead of squash.



Final recommendations

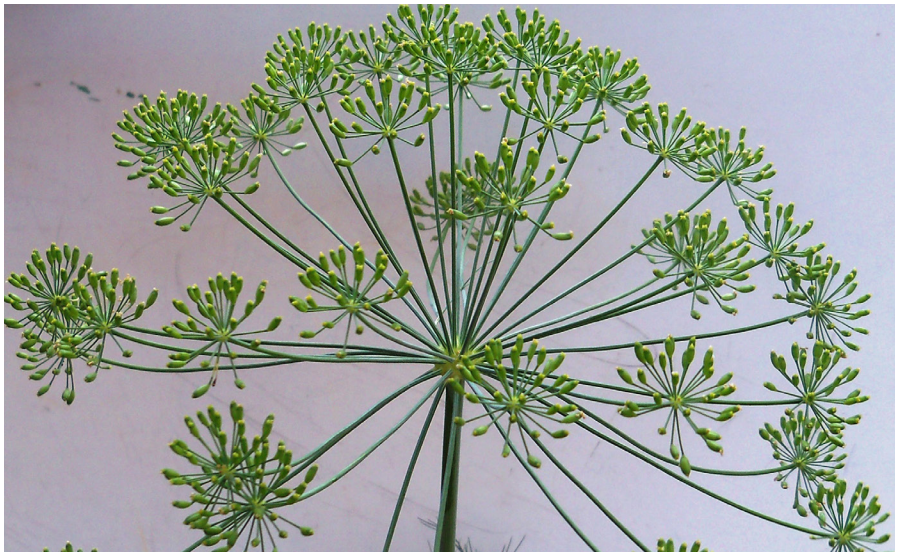
- To confuse and divert the attention of pest insects, we recommend planting groups of plants that are different from the groups in the neighboring sections, every five meters of the bed (including those in the beds on each side).
- Dill can be associated with cabbage and tomato. Dill attracts wasps that parasitize larvae that damage crops.
- It is advisable to plant radish around sweet peppers, spinach and other plants that are attacked by leaf miners. These insects have a preference for radish but do not affect its production.
- Colorful flowers are important in the plot as they attract many different types of pollinators.









































Herbs

It is important to plant strong-smelling herbs (such as oregano, coriander, mint, dill, rue, rosemary, others) so that their aromas add to the mix that helps confuse and repel pest insects. Many of these herbs are used for cooking, in addition to having medicinal qualities. It is advisable to plant herbs on the side from which the wind blows.

In the following illustrations we share some recommendations and tips for associating crops:

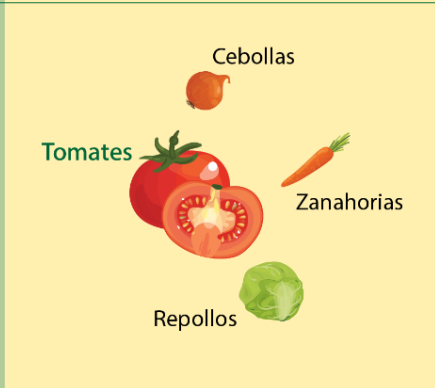
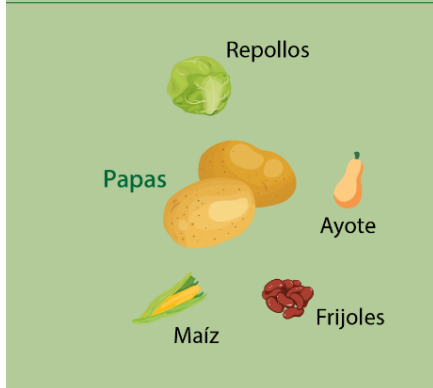


Recomendaciones para los Asocios

Rubro	Buenas compañías	Malas compañías
 Frijol	 Maíz, girasol, lavanda, repollo, pepino, berenjena	 Cebolla, ajo, repollo, hinojo
 Remolacha	 frijol, cebolla, ajo, lechuga, repollo	
 Berenjena	 caléndula, flor de muerto, menta	
 Brócoli, Repollo, Coliflor, Kale	 Plantas aromáticas, eneldo, salvia, romero, remolacha, apio, ajo, cebolla	 Tomate, ajo, Chile dulce
 Zanahoria	 Lechuga, cebollín, romero, salvia, ajenjo, repollo	 Hinojo
 Lechuga	 Zanahoria, rábano, pepino, frijol	 Apio, perejil
 Maíz	 Girasol, amaranto, frijol y otras legumbres, calabaza, ayote, pepino, sandía y otras cucurbitáceas, perejil	 Repollo, tomate, apio
 Cebolla, Ajo	 Zanahoria, remolacha, tomate, lechuga, repollo	 Frijol, perejil, cebollín
 Chile dulce	 Tomate, albahaca, zanahoria, cebolla	 frijol, kale, repollo
 Papa	 Cilantro, flor de muerto, frijol, maíz, repollo, berenjena	 Calabaza, pepino, ayote, girasol, tomate
 Espinaca	 Habas (chonete), frijol	
 Tomate	 Albahaca, orégano, perejil, cebollín, cebolla, zanahoria, apio, caléndula	 Papa, hinojo, repollo
 Chile picante	 Repollo, maíz, albahaca, tomate, zanahoria	
 Flor de muerto (San Diego)	Siembre libremente en todo el huerto - repele nematodos del suelo, pulgones, escarabajos de frijol y muchos más	
 Tomillo	 Repollo	

Recomendaciones para los Asocios

Siembre estos vegetales juntos para aprovechar al máximo el espacio y confundir a las plagas



¿Sabías que?



Las zanahorias repelen las orugas que comen las hojas de repollo

La cebolla repele muchas plagas

Los rábanos repelen a los escarabajos del pepino

El repollo, las cebollas y los cebollines repelen las moscas de la zanahoria

Los rábanos atraen a los minadores de las espinacas: aunque coman sus hojas, el tubérculo no es afectado.

Los rábanos repelen plagas de la lechuga