Simplified Botanical Classification

Learn to recognize the main vegetable families in the garden to understand which can cross-pollinate with each other, and avoid bad mixtures in the field without complicated jargon.



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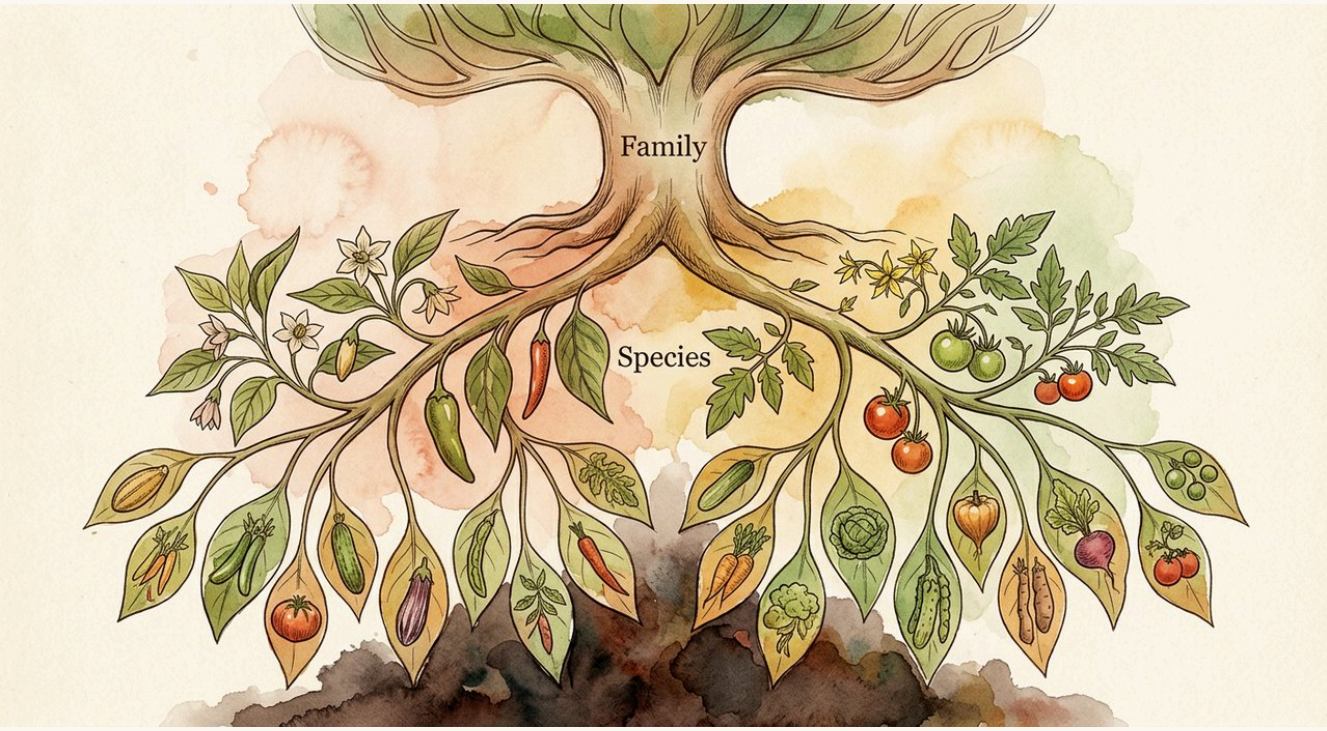
Avoiding Unpleasant Surprises in the Field

Why do two cucumbers planted next to a melon cause no problems, while two different peppers completely change their taste?

In this module, you will learn to recognize plant families to protect the purity of your seeds.

2

Like a Big Human Family



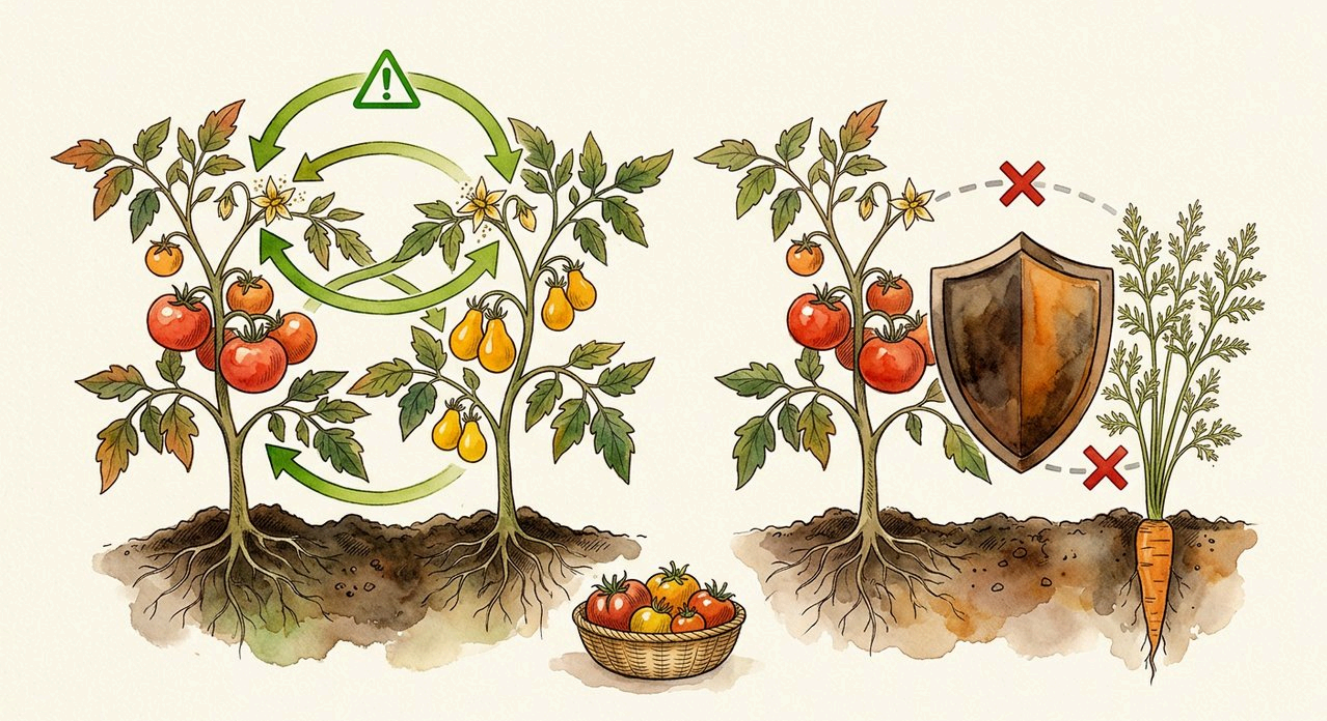
Like a Big Human Family

In the plant kingdom, it's like a big human family:

- Plants of the same **family** are like cousins: they have similar flower or leaf shapes.
- Within each family, there are different **species**: like brothers and sisters.
- And within each species, there are different local **varieties**: like unique individuals.

3

The Golden Rule of Cross-Pollination



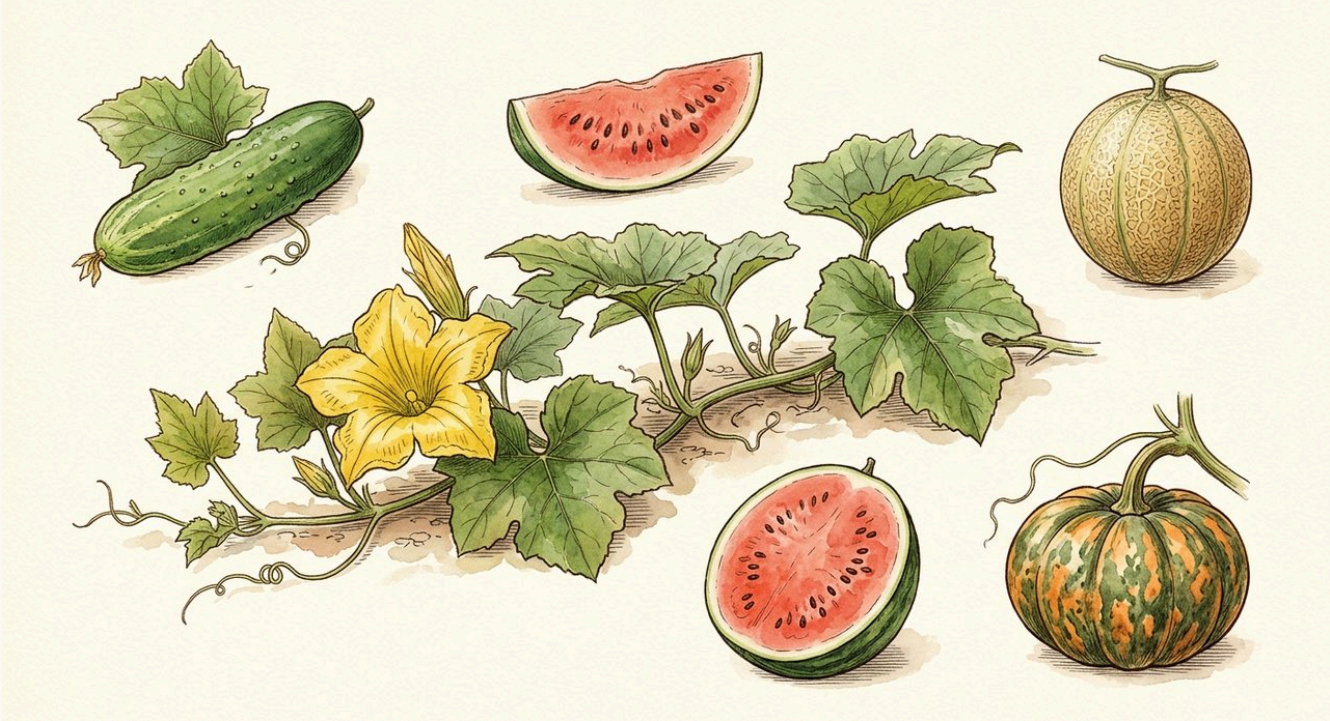
The Golden Rule of Cross-Pollination

Remember this fundamental rule:

Only varieties of the **SAME SPECIES** can easily mate and cross-pollinate.

Plants of different species or different families NEVER naturally cross-pollinate with each other.

Nature establishes this protective barrier.



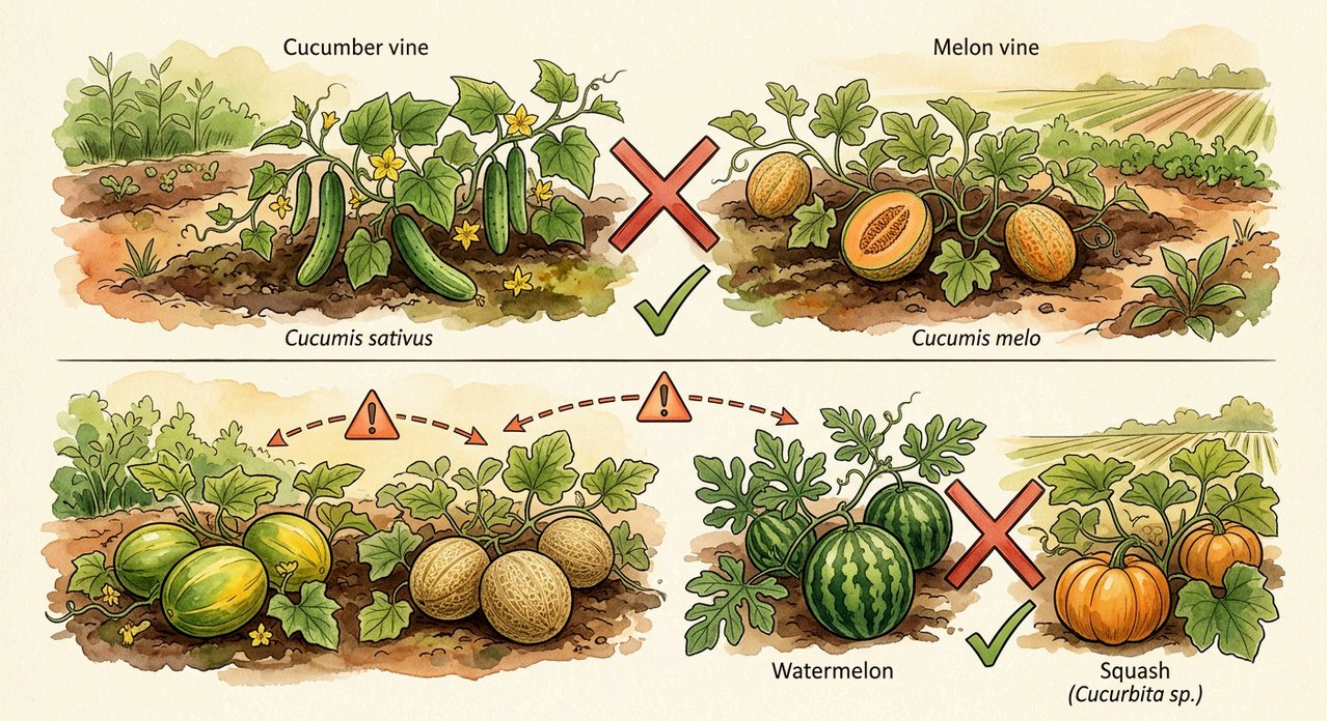
First Family: Cucurbitaceae (the squash family)

Recognizable by their large, rough leaves and creeping or climbing stems.

This is the **Cucurbitaceae** family.

It includes squashes, zucchinis, cucumbers, watermelons, and melons.

Beware of species in the squash family!



Beware of species in the squash family!

In the squash family, cucumber and melon are different species:

✅ **Cucumber** NEVER crosses with **melon**.

✅ **Watermelon** NEVER crosses with **squash**.

> ⚠️ But two varieties of **melons** planted side-by-side will ALWAYS cross!



Second Family: Solanaceae (the Tomato Family)

These are plants with star-shaped flowers:

This is the **Solanaceae** family.

It includes tomatoes, eggplants, chili peppers, bell peppers, and potatoes.

Chili peppers and bell peppers: same species!



Chili peppers and bell peppers: same species!

Beware of flavor danger!

Hot chili peppers and sweet bell peppers belong to the **same species**.

If you plant them too close, insects will transport pollen:

Your bell pepper seeds will produce spicy fruits next season!



Third Family: Fabaceae (Snap Peas and Beans)

Their flowers resemble small butterflies and their seeds grow in pods.

This is the **Fabaceae** family (or legumes).

It includes cowpea (vigna), peanut, bean, and pea.

These plants have the power to enrich your soil with nutrients!



Beans Prefer to Stay True

Good news for the farmer:

In most beans and cowpeas, the flower self-pollinates even before it opens!

This is called an **autogamous** plant.

The risks of cross-pollination with a neighbor are therefore much lower than with squash.



Fourth Family: Brassicaceae (the Cabbage Family)

Their flowers have 4 petals arranged in a cross shape.

This is the **Brassicaceae** family (the cabbages).

It includes head cabbage, leaf cabbage (sukuma wiki), radish, and mustard.

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Cabbages like to mix



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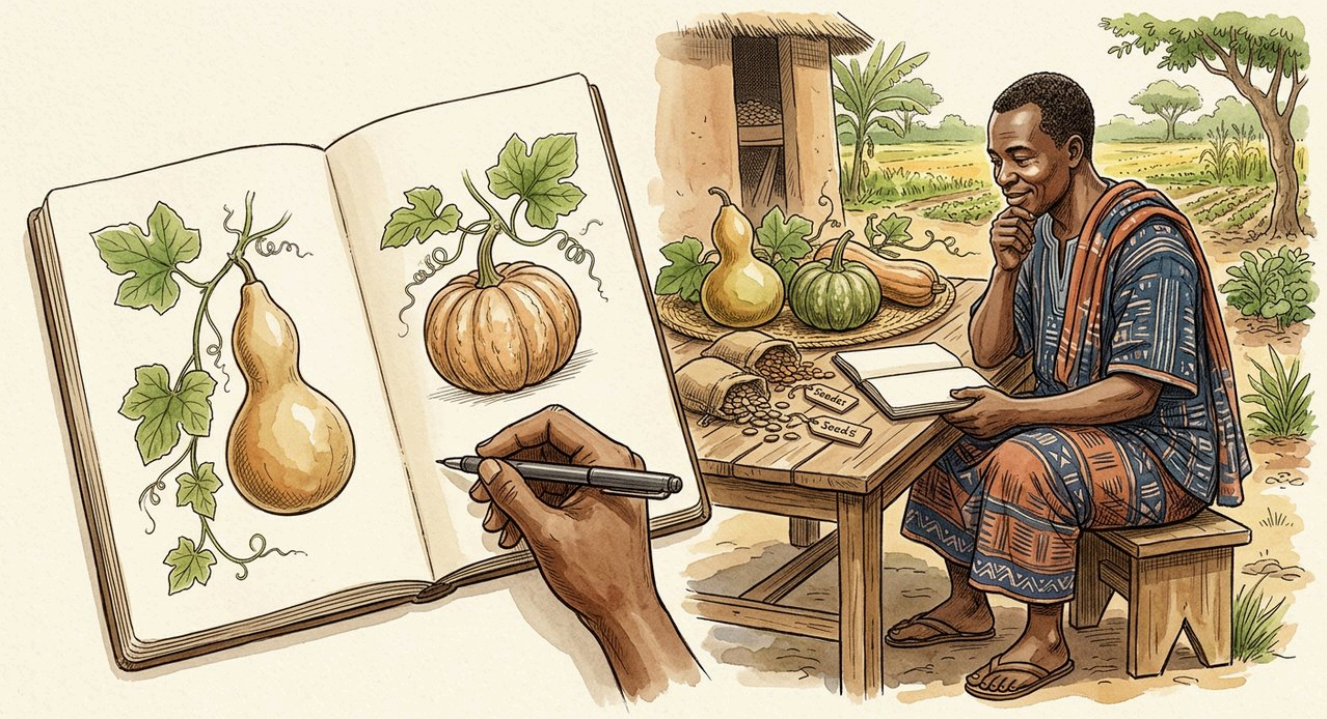
Unlike beans, cabbage often rejects its own pollen.

It needs wind and bees to bring pollen from other cabbage plants:

This is called an **allogamous** plant.

All cabbages of the same species cross-pollinate very easily with each other!

Why give seeds a precise name?



Why give seeds a precise name?

The common word can be misleading. When we say "squash," it can refer to 3 totally different species that do not cross-pollinate.

Seed producers therefore sometimes use two precise words to designate the exact species.

But on your plot, a good notebook and clear labels are enough to find your way around!

Memo Table: Who Cross-Pollinates With Whom?



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To know what to isolate:

- **Chili Pepper ❌ Bell Pepper**: Cross-pollinate 100%! (Isolate imperatively)
- **Melon ❌ Cucumber**: NEVER cross-pollinate (Can be grown side-by-side)
- **Two tomato varieties**: Cross-pollinate little, except in high heat
- **Two corn varieties**: Cross-pollinate very easily with the wind

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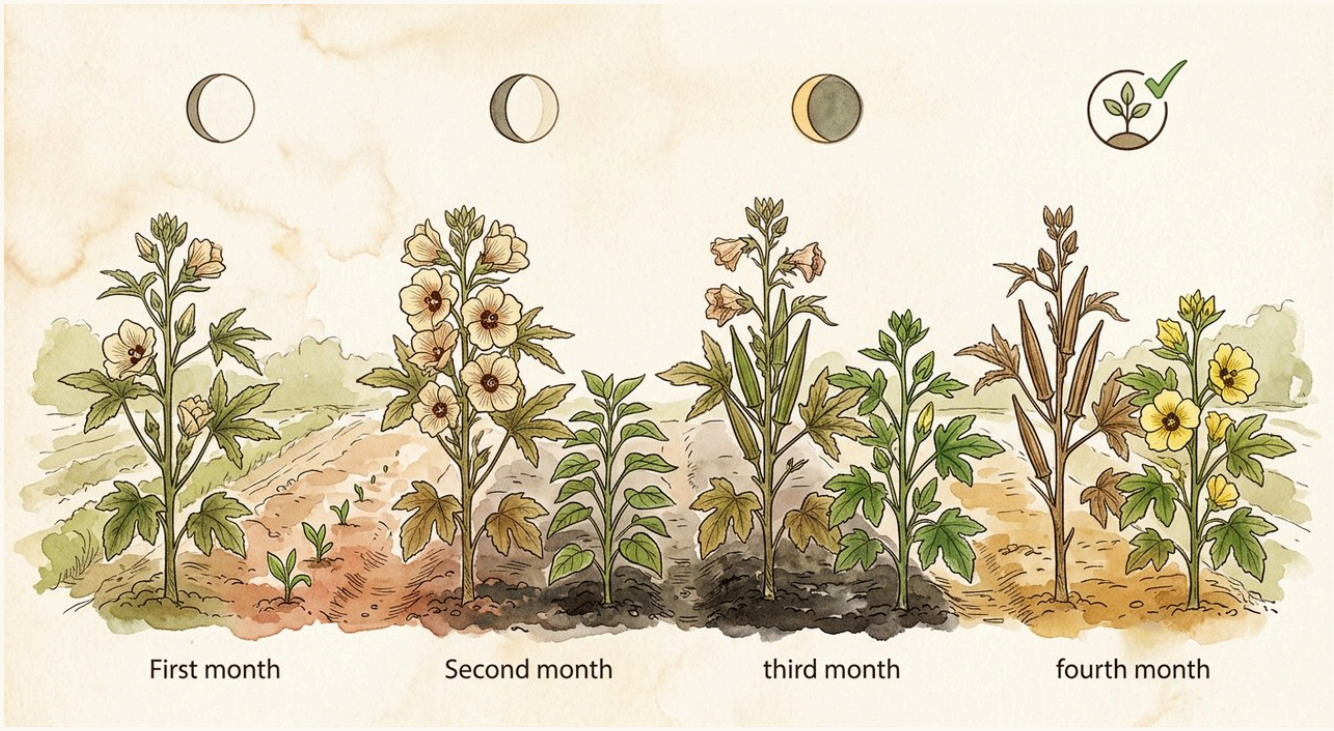
How to apply this to your plot?



How to apply this to your plot?

To produce pure seeds:

1. Group your crops by family on your garden plan.
2. Grow ONLY ONE seed variety of the same species at a time on the same plot.
3. If you want two different varieties, separate them by a long distance or sow them in different months.



The Market Gardener's Trick: Staggered Planting

Don't have enough space to separate your crops by several hundred meters?

Simply **stagger your sowing dates**!

If the first variety finishes flowering before the second begins to open its flowers, no cross-pollination is possible.

Congratulations! You speak the language of families



Congratulations! You speak the language of families

Well done! You understand how plants associate:

✅ You know that only plants of the same species cross-pollinate

✅ You know that chili peppers and bell peppers must be closely monitored

✅ You know how to stagger your crops over time to protect your seeds

Next module: how to choose the best starter seeds to begin your autonomy!