

Improvement of native corn In-field selection

Due to the free pollination of its flowers, the corn plant is easy to cross-pollinate with other plants and in other plots. Phenotypic (or mass) selection is the oldest, simplest and cheapest method of crop improvement, and it requires few resources.



It is the visual selection of ears of corn based on physical and phenotype differences between plants. The ears are chosen one by one in the cornfield.

Tools and materials required

- Billhook machete
- Hoe
- Native seeds
- Organic fertiliser
- Coloured ribbons
- Bags or sacks



Training

Learn how corn reproduces, what are the characteristics of a good production plant and its cobs to develop rugged varieties that give a greater yield and resist climate change, pests and diseases.

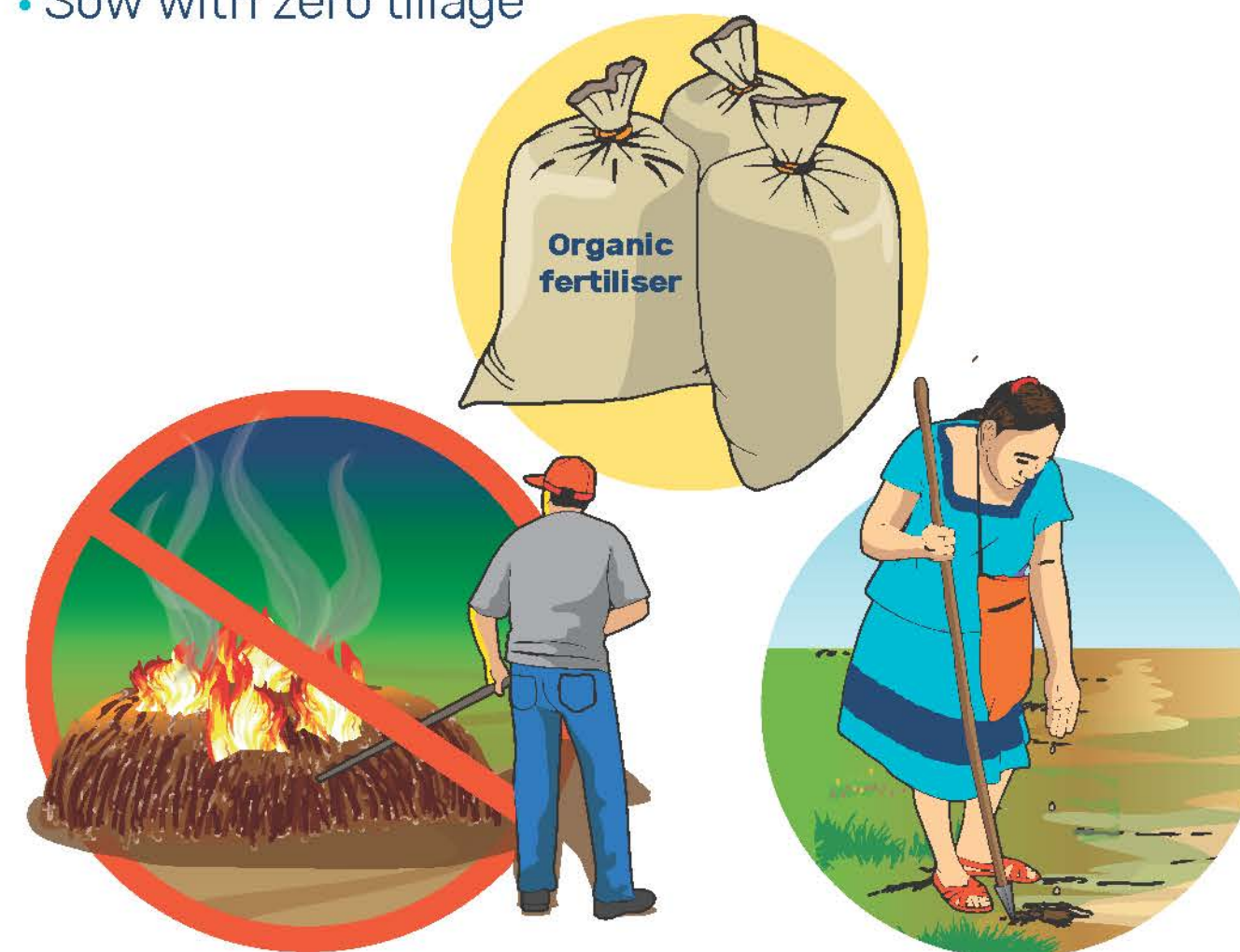


Selection criteria

- Choose the healthiest plants, with good appearance, with some 14 leaves, stout, average height, thick stalks, and no insect or burn damage.
- Tie a colourful ribbon or string to the plants that produce ears first.
- Don't choose corn plants at the edges of fences or paths.
- Prefer ears that are one metre from the ground. The distance from the ground should be less than the distance to the tassel.

Cultivation tasks

- Choose an area where corn is not being planted nearby at the same time.
- Use organic fertiliser.
- Leave the crop stubble as mulch, don't burn it.
- Sow with zero tillage



Harvest

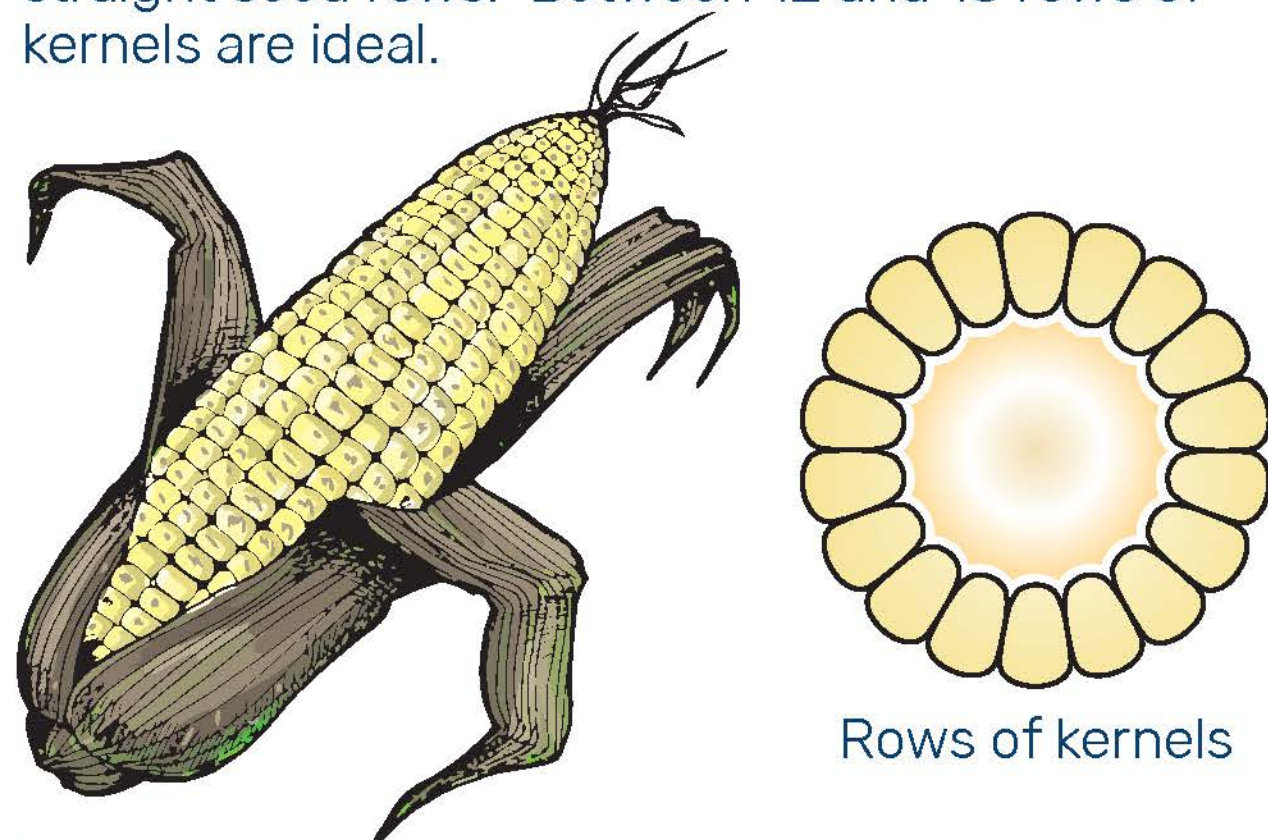


Choose the best-developed ears that are well-covered by the husks, so that no kernels are showing. The driest will produce early bloomers.

Improvement of native corn

In-house selection

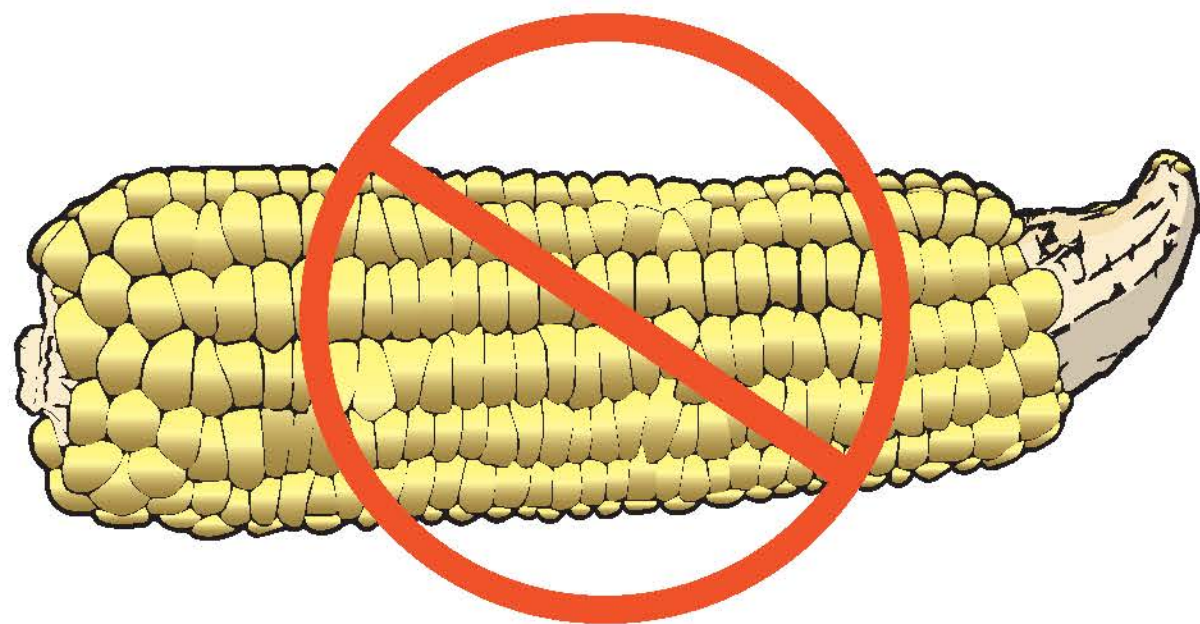
A good indicator of good corn is the number of straight seed rows. Between 12 and 18 rows of kernels are ideal.



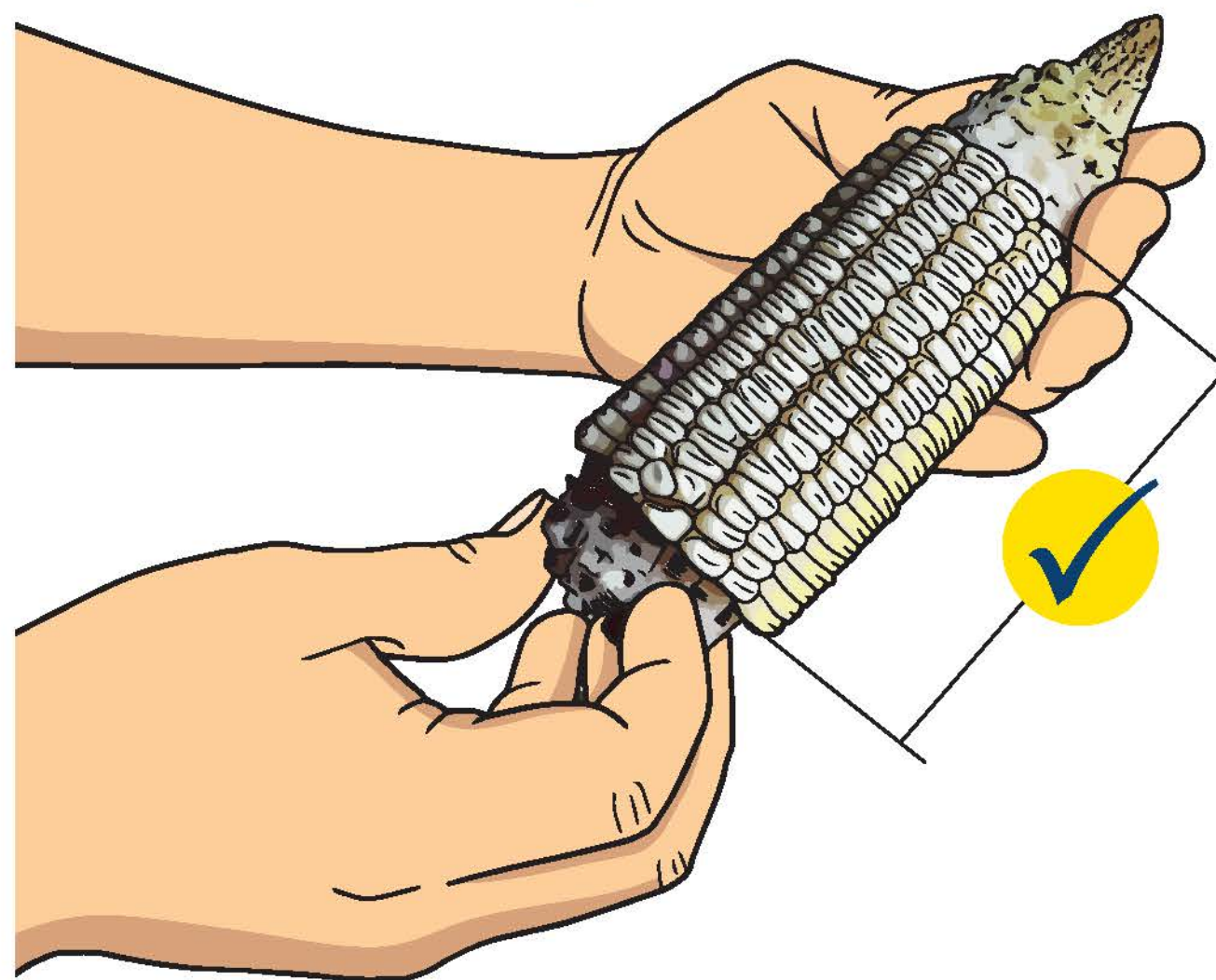
The best corns have kernels that are all the same colour. That shows they were not crossed with any other corn species.



Triangular-shaped kernels produce weak plants. Choose the plumper ones.



Get rid of the kernels at the stem and tip of the cob. Choose the plump, healthy kernels from the middle of each corn and shell by hand.



The best sowing kernels are heavy, smooth, and unblemished.

They make a tinkling sound when shaken.



Recommendations:

- After 50 days there should be seven developed leaves above and below the ear. The more leaves the plant has, and the bigger and greener they are, the stronger and more productive it will be.
- Going regularly to the field and watching the cornfield's progress makes selection easier.
- Bending or flattening is a bad sign. Any plant that bends must be discarded.
- Do the germination test before planting.

Sought-after qualities

Mass selection seeks to obtain an early-ripening native corn, with a smaller height and panicle size, that gives greater yield, is resistant, and can tolerate a greater quantity of plants per manzana (0.7h).

