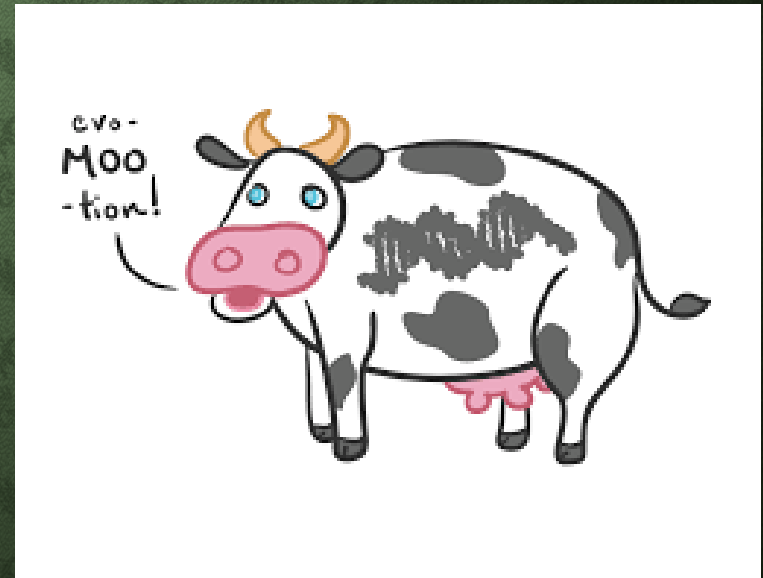# ARTIFICIAL SELECTION.....

Designing our future

HUMANS SELECT DESIRED CHARACTERISTICS IN ORGANISMS TO BE PASSED ON TO THE NEXT GENERATION.

- **Artificial selection:** selective pressure exerted by humans on populations in order to improve or modify desirable traits

- Humans breed cows that produce more milk, chickens that produce large numbers of eggs, and pigs with large muscles for meat.

ARTIFICIAL SELECTION AND FOOD CROPS

- Humans breed crops to resists drought, disease, and insect infestations.

- Through selective breeding, the wild mustard plant is used to produce six other plants.

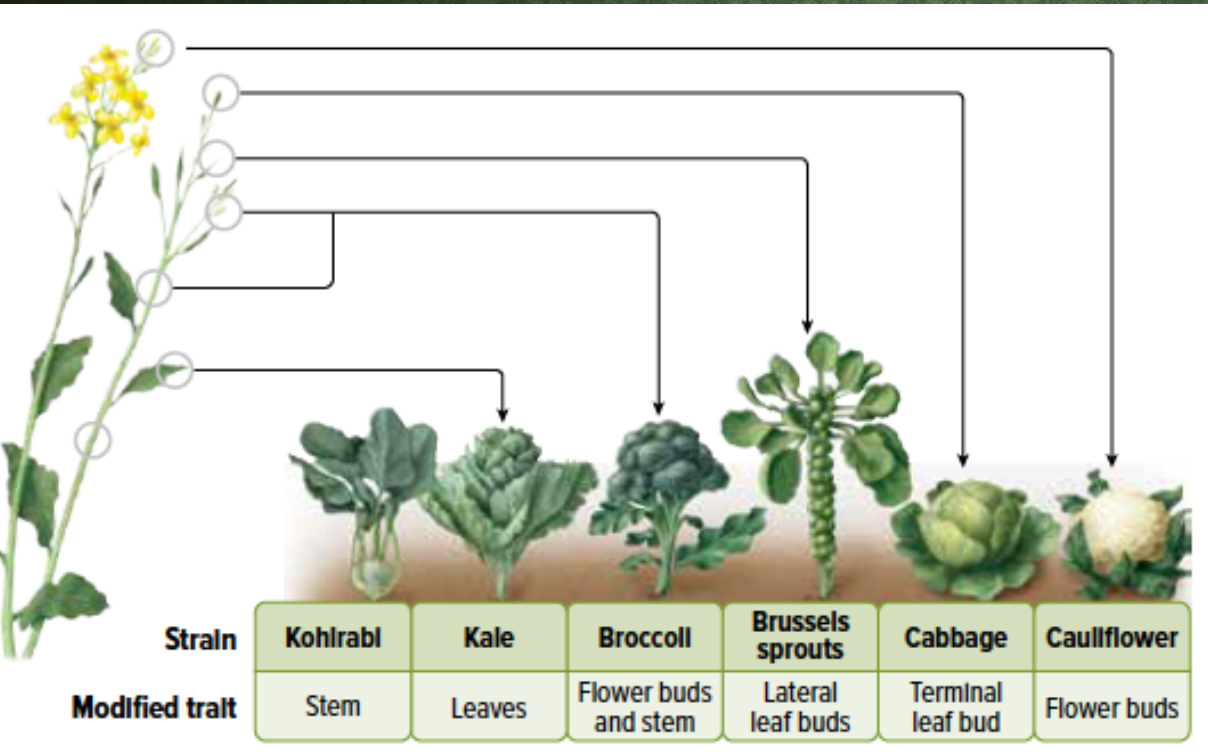| Strain	Kohlrabi	Kale	Broccoli	Brussels sprouts	Cabbage	Cauliflower
Modified trait	Stem	Leaves	Flower buds and stem	Lateral leaf buds	Terminal leaf bud	Flower buds

Figure 1.31: These six agricultural plants look very different from each other, but they carry much of the same genetic material as the wild mustard plant. The differences affect the formation of flowers, buds, stems, and leaves.

CONSEQUENCES OF ARTIFICIAL SELECTION

- Some selectively bred animals have health problems (i.e., English bulldogs have respiratory problems and German shepherds have hip problems).

- Selectively bred plants lack genetic diversity because they are all similar.

  - This leaves organisms vulnerable to disease and environmental changes

MONOCULTURE

- repeated planting of the same varieties of a species over large expanses of land