Plant

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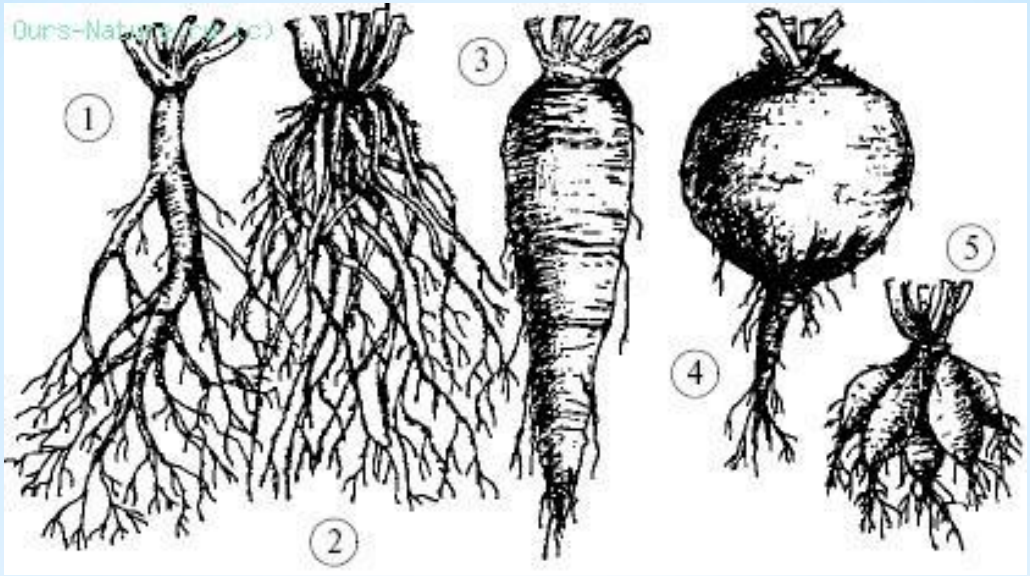
Plants are called photosynthetic organisms belonging to the eukaryotes. They have a cellular cellulose membrane, a spare nutrient in the form of starch, are sedentary or stationary and grow throughout life. The pigment chlorophyll contained in them gives plants a green color. The light from carbon dioxide and water, they create organic matter and release oxygen, thus providing nutrition and respiration of all living organisms. Plants also have a regenerating ability can restore the vegetative organs.

The structure of plants.

The body of plants is usually dissected to the root and escape. Of the higher plants, the most highly organized, numerous and common are flowering plants. In addition to the root and escape, they have flowers and fruits – organs that are absent from other groups of plants. The structure of plants is convenient to consider on the example of flowering plants. Vegetative organs of plants, root and escape, provide their nutrition, growth and asexual reproduction.

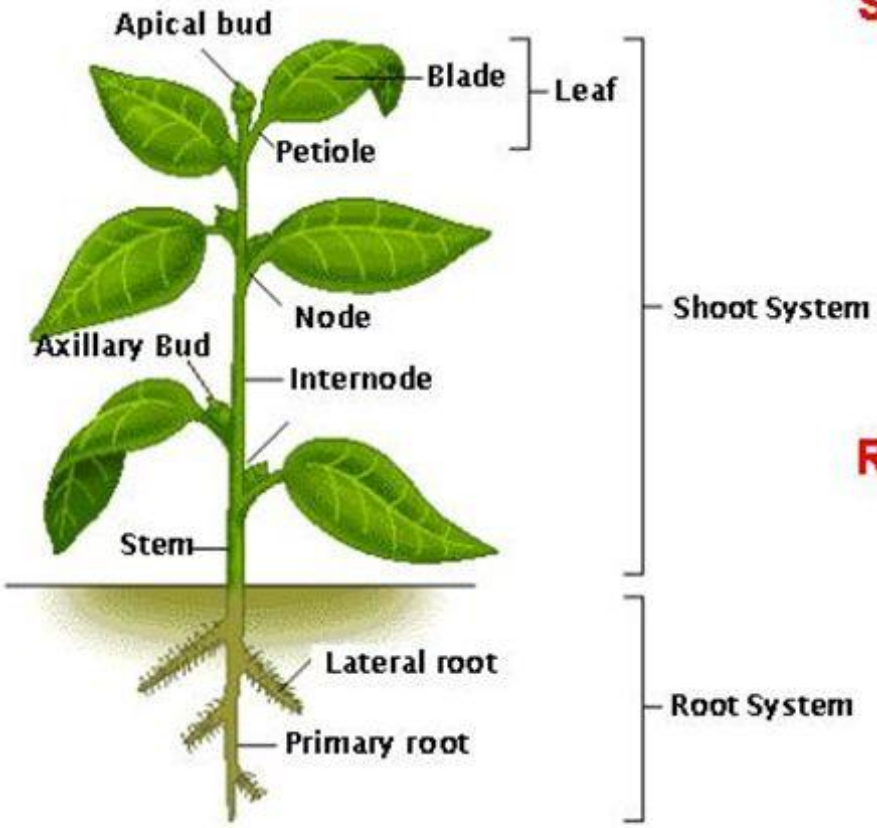


The roots begin to form already in the Bud of the plant. When germinating the seed, the main root is formed from the germ root. After some time, he grow many lateral roots. A number of plants from stems and leaves formed adventitious roots. The totality of all roots is called the root system.

Escape is a complex vegetative organ consisting of buds, stems and leaves. Along with vegetative, flowering plants have generative shoots on which flowers develop. Escape is formed from the germ kidney of the seed. The development of shoots of perennial plants from the kidneys clearly seen in the spring

Plant morphology – plant organs

The Plant Body Consists of the Shoot System and the Root System



Shoot System - Functions

- Photosynthesis
- Reproduction
- Storage
- Transport
- Hormones

Root System - Function

- Anchorage
- Absorption
- Storage
- Transport
- Hormones

Stem-is the axial part of the escape, which are the leaves and buds. It performs a supporting function in the plant, ensures the movement of water and minerals from root up to leaves, organics-down, from leaves to root

Plant Tissue Culture

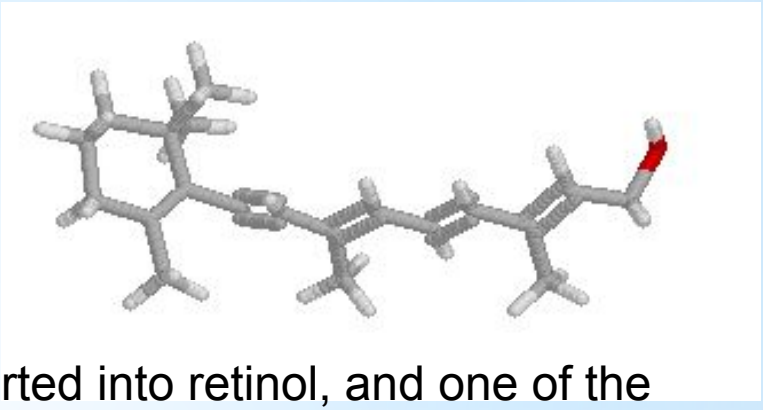
Plant cells differ from animals cells in that they are totipotent

A totipotent cell is one that can develop into specialized cell types & regenerate an entire organism

Tissue culture of plants and the regeneration of complete plants from cells has been done since 1930s

This allows large-scale clonal propagation of plants

Vitamin A



Vitamin A (retinol) is essential to human growth

Our bodies cannot make vitamin A,

All carotenoids that contain a β-ring can be converted into retinol, and one of the most important carotenoid pro-vitamins is β-carotene

β-carotene is a pigment required for photosynthesis

- produced in all plant green tissues

Vitamin A deficiency

400 million people are at risk of vitamin A deficiency (VAD), particularly in Asia and Africa

implicated in up to 2.5 million deaths annually in children under 5

VAD makes children especially vulnerable to infections

0.5 million children go blind each year because of VAD

Supplementation programmes have reduced child mortality by up to 50% in target areas

supplementation not universal; expensive; misses remote areas

VAD is most serious in regions where rice is the staple food ; up to 70% children under 5 affected

Vaccine Foods

In the early 1990's tomatoes, bananas, & potatoes were proposed as delivery vehicles for vaccines

Touted as a simple method of delivering vaccines especially to developing countries

Studies have shown plant-produced oral vaccines to increase immunity in mice

Potatoes containing Hepatitis B vaccine have been shown to boost immunity in humans

There are concerns about dosing when these crops are directly consumed.

Would a dose be? 2 bananas and a tomato

What if a person eats too many vaccine potatoes?

Also there is concern if the vaccine foods enter the food supply of people who are vaccinated the traditional way

Plants as Bioreactors

Plants (crops or cell culture) can be used to produce proteins currently produced by microbes or animal cells

The advantage over microbes:

The proteins are more like human proteins

The advantage over animal cells:

Plants cannot become contaminated with mammalian pathogens


I WON'T EAT ANYTHING THAT'S GENETICALLY MODIFIED...
IT COULD BE UNHEALTHY..
CHIPS
Rex Babin is on vacation
Anderson / Courier Journa