

POISONOUS PLANTS OF TURKEY

Week 3

General Information

-In our country, poisoning with plants is generally seen in rural areas.

-There are very few studies on toxic plants in our country.

By Öztürk et al., (2008, Pak. J. Bot. 40(4):1359-1386.) poisonous plants in Turkey and Cyprus are investigated and 474 taxa belongs to 64 family have been designated (%4 of whole taxa number).

-In the US, 3.5% of all cases of poisoning are because of poisonous plants.

-In our country, naturally grown or cultured many toxic plants like from ferns to herbaceous plants, from bushes to trees are found.

-Although fungi are not accepted as plants, they are examined under this heading.

- It is not possible to distinguish toxic plants from non-toxic plants.**
- Toxic plants do not have common/shared characteristics.**
- It is also impossible to come to any conclusion as to the degree of toxicity of a plant according to the morphological features.**

-Most of the poisonous plants taste bad, so the adult spits the plant immediately.

-But the **taste of some poisonous plants may not be that bad.** As a result, this plant, which is not recognized as toxic, can be dangerous if consumed too much.

-For example, the fruit of *Solanum dulcamara* from Solanaceae family is red and sweet. Due to the toxic alkaloid content, about 10 fruits can kill a child.

THE MOST EFFECTED GROUP IS CHILDREN.

- Because compared to adults, **even very low amounts of toxic substances can cause serious health problems.**
- In contrast to adults, **children do not spit out the plants that have a bad taste.**
- Fruit with attractive colors (and every object / plant they see around them) is always **attractive to children.**

The reaction to a poisonous plant may vary from person to person, regardless of age.

The person's sensitivity, metabolism, diet, and even medications may cause this difference.

TOXIC/ HARMFUL REACTIONS OR EFFECTS

- **allergic reactions** (due to pollen, spores or some volatile compounds)
- **some skin problems** such as irritation, redness, dermatitis (due to direct or indirect contact with irritant and some allergic compounds)
- **photosensitization on the skine** (due to light-sensitive compounds)
- **Internal poisoning and irritation** (due to feed of poisonous plants / plant parts)

WHY ARE SOME PLANTS ARE POISONOUS?

Plants **cannot escape from enemies** like animals. Therefore, **they must protect themselves** in another way.

Some plants protect themselves with **thorns**.

However, the most advanced form of protection in plants is **CHEMICAL** and in the "**natural selection**" stages, plants have evolved in a wide range to produce a large number of different chemical compounds.

- Poisonous compounds can be synthesized through very different chemical pathways in the plant's metabolism. The toxic compounds present in plants are generally defined as «secondary metabolite».

Chemical compounds in plants are usually divided into primary and secondary metabolites.

Primary metabolites (such as **carbohydrates, fats, proteins**) are directly involved in the **normal growth, development and proliferation** of the plant.

They are quite common in nature. Seeds of high plants, vegetative tissues are quite high.

Due to their basic role in cell metabolism, they are necessary for the physiological development of the plant. They are the **cornerstones of life.**

Secondary metabolites that are not directly related to the essential vital functions of the plants but as important as the primary metabolites. They are chemical substances, used as raw materials in many sectors.

What are plant produce the secondary metabolites?

