

Gymnosperms

“Gymnosperms are a group of plants that produce seeds not enclosed within the ovary or fruit.” The word “Gymnosperm” comes from the Greek words “gymnos” (naked) and “sperma” (seed), hence known as “Naked seeds.”

Gymnosperms are the seed-producing plants, but unlike angiosperms, they produce seeds without fruits.

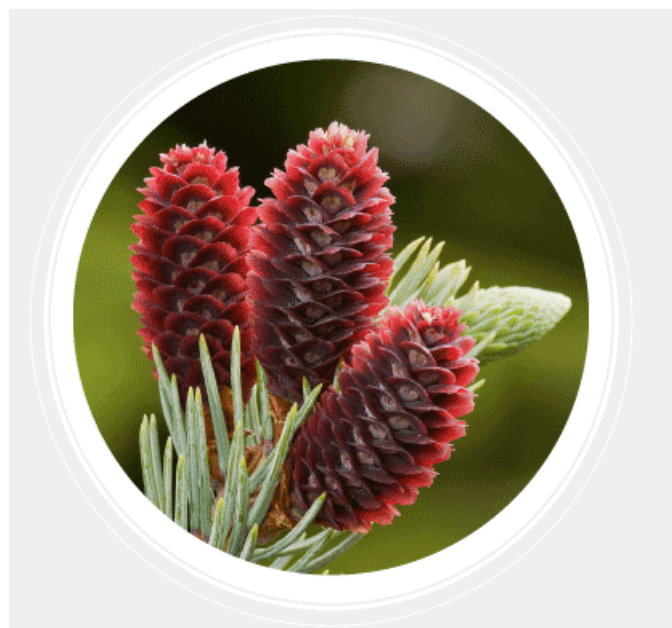
These plants develop on the surface of scales or leaves, or at the end of stalks forming a cone-like structure.

Gymnosperms belong to kingdom ‘Plantae’ and sub-kingdom ‘Embryophyta’.

The fossil evidence suggested that they originated during the Paleozoic era, about 390 million years ago.

Basically, gymnosperms are plants in which the ovules are not enclosed within the ovary wall, unlike the angiosperms.

It remains exposed before and after fertilisation and before developing into a seed. The stem of gymnosperms can be branched or unbranched. The thick cuticle, needle-like leaves, and sunken stomata reduce the rate of water loss in these plants. The family of gymnosperms consist of conifers, the cycads, the gnetophytes and the species of Gynkgophyta division and Ginkgo biloba.



Characteristics of Gymnosperms

Following are the important characteristics of gymnosperms:

1. They do not produce flowers.
2. Seeds are not formed inside a fruit. They are naked.
3. They are found in colder regions where snowfall occurs.
4. They develop needle-like leaves.
5. They are perennial or woody, forming trees or bushes.
6. They are not differentiated into ovary, style and stigma.
7. Since stigma is absent, they are pollinated directly by the wind.
8. The male gametophytes produce two gametes, but only one of them is functional.
9. They form cones with reproductive structures.
10. The seeds contain endosperm that stores food for the growth and development of the plant.
11. These plants have vascular tissues which help in the transportation of nutrients and water.
12. Xylem does not have vessels and the phloem has no companion cells and sieve tubes.