

Relationships of *Gnetum*:

***Gnetum* and Other Gymnosperms:**

Gnetum shows several resemblances with gymnosperms and has, therefore, been finally included under this group.

Some of the characteristics common in both *Gnetum* and other gymnosperms are under mentioned:

1. Wood having tracheids with bordered pits.
2. No sieve tubes and companion cells are present.
3. Presence of naked ovules.
4. Absence of fruit formation because of the absence of ovary.
5. Anemophilous type of pollination.
6. Development of prothallial cell.
7. Cleavage polyembryony.
8. Resemblance of the vascular supply of the peduncle of the cone of *Cycadeoidea wielandii* with that of a single flower of *Gnetum*.
9. Resemblance of the structure of basal part of the ovule in *Gnetum* and Bennettites.

***Gnetum* and Angiosperms:**

A key position to *Gnetum* has been assigned by scientists while discussing the origin of angiosperms. Both Gnetales and angiosperms originated from a common stalk called "Hemi-angiosperm".

Thompson (1916) opined that the ancestors of both *Gnetum* and angiosperms were close relatives. Some other workers have gone up to the extent in stating that *Gnetum* actually belongs to angiosperms. Hagerup (1934) has shown a close relationship between Gnetales and Piperaceae.

In a beautiful monograph on *Gnetum*, Maheshwari and Vasil (1961) have stated that “*Gnetum* remains largely a phylogenetic puzzle. It is gymnospermous, but possesses some strong angiospermic features”.

Resemblances between *Gnetum* and angiosperms:

1. The general habit of the sporophyte of many species of *Gnetum* resembles with angiosperms.
2. Reticulate venation in the leaves of *Gnetum* is an angiospermic character.
3. Presence of vessels in xylem is again an angiospermic character.
4. Clear tunica and corpus configuration of shoot apices is a character of both *Gnetum* and angiosperms.
5. Strobili of *Gnetum* resemble much more with angiosperms than any of the gymnosperms
6. Micropylar tube of Gnetales can be compared with the style of the angiosperms because both perform more or less similar functions.
7. Tetrasporic development of the female gametophyte is again a character which brings *Gnetum* close to angiosperms.
8. Absence of archegonia again brings *Gnetum* and angiosperms much closer.
9. Dicotyledonous nature of the embryo of *Gnetum* brings it quite close to the dicotyledons.

Economic Importance of *Gnetum*:

1. Seeds of *Gnetum gnemon*, *G. latifolium* and *G. ula* are eaten after boiling or roasting. Sometimes they are fried in oil and eaten.
2. Young leaves and inflorescence of *Gnetum gnemon* and *G. latifolium* are cooked as vegetable.

3. A fiber of high tensile strength is obtained from the bark of *Gnetum gnemon* and *G. latifolium*, and used for making fishing nets and ropes. Ropes prepared from this fiber are light, strong and pliable.
4. Paper is made from the pulp produced from the bark of *Gnetum gnemon*.
5. A fixed oil, used for illumination and also affective in rheumatism, is obtained from the kernels of *Gnetum ula*. It is used widely in Kerala and Assam.
6. *Gnetum montanum* possesses pesticidal properties.

Reference Link:

<http://www.biologydiscussion.com/gymnosperm/gnetum-distribution-habitat-and-relationships-gnetales/22583>