

Apogamy - The development of a plant without the union of gametes, development of a sporophyte from a gametophyte without fertilization.

Many inhabitants of dry rocky slopes and cliffs, especially in the maidenhair family, Pteridaceae have developed a modified type of life cycle known as apogamy, in which fertilization is bypassed.

This life cycle is also believed to bring up quick reproduction in connection with slightly wet periods; the gametophytes grow quickly, with buds developing directly into sporophytes.

~~Apogamy~~ Apogamy is the development of an unusual haploid sporophyte from the gametophyte without the fusion of gametes. The cause of apogamy include ageing of the prothallus, failure of sex organ formation and normal fertilization, prothallus growing under bright light and high temperature etc. Natural Apogamy is common in ferns like Dryopteris, Adiantum, Osmunda, Pteris etc.

Apospory - Apospory is the development of unusual diploid gametophyte from the vegetative parts of sporophyte and not from the spores
or

The formation of the gametophyte directly from the cells of the sporophyte other than a spore is called apospory.

Eg - Pteris, Nephrolepis, Drynaria etc.

Heterospory - In heterosporous forms, 2 types of spores develop i.e. microspores and megaspores.

Eg - Selaginella kraussiana. Microspores are smaller in size & develop into male gametophyte while the megaspores are large & develop into female gametophyte.

Homosporous - A homosporous life history occurs in nearly all bryophytes and most pteridophytes. It is characterized by morphologically identical spores that germinate to produce bisexual (both male & female gamete) gametophytes in pteridophytes but either bisexual or more usually unisexual (either male or female) gametophytes in bryophytes.

Eg - Selaginella, Marsilea, Azolla - Pteridophytes.
Dryopteris.