SEXUAL REPRODUCTION IN ASCOMYCETES

Various steps of sexual reproduction in fungi are summarized below-

1. Sexual reproduction takes place by the two fusion of two compatible nuclei, brought together in many different ways such as gametangial contact, spermatization and somatogamy.
2. In some genera definite male (antheridia) and female (ascogonia) gametangia are formed, whereas in others the fusion of somatic hyphae takes place.
3. Both the types of homothallic as well as heterothallic occur
4. In majority of the Ascomycetes the bringing together of two compatible nuclei stimulates the female gametangium (ascogonium) to produce a number of hyphal extensions called ascogenous hyphae
5. Pairs of nuclei migrate into these ascogenous hyphae and undergo mitotic division.
6. The ascogenous hyphae become septate (Fig 12.4A,B), and two compatible nuclei fuse in ascus mother cell. The latter subsequently develop into an ascus. (fig 12.4 C-E).
7. The diploid zygote nucleus of the ascus immediately undergoes meiosis. Four haploid nuclei are produced (fig 12.4 F,G). Further, they divide mitotically to form eight haploid nuclei in an ascus. (Fig 12.4H)
8. These eight haploid nuclei get enveloped individually with a portion of cytoplasm and develops into eight ascospores (Fig 12.4 H,I)
9. In majority of the Ascomycetes the asci are produced, which may be of perithecium, apothecium or cleistothecium types.
10. The ascospores are liberated from the ascus and germinate into fresh mycelium.

