

History and taxonomy of the fusarium genus of fungi

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Classification of *Fusarium* begun with Link 1809 who first described the fungi as *Fusisporium* (Geiser, Aoki, Bacon, Baker, Madan, et al., 2013) and has over the past 100 years been opened to quite a number of discussions and has been subjected to several amendments (Arias, 2012).

The genus according to the scientific classification system has been categorized among the Ascomycota phylum and the Ascomycete class. It belongs to the order Hypocreales but the teleomorphs of *Fusarium* species are generally categorized into the genus *Gibberella* along with the least number of the species belonging to the genus *Albonectria* and *Hemanectria* (McGee, 1992).

It is known to be the members in the genera Eumycota which is the most capable of adapting to different environmental conditions (Fourie, Steenkamp, Ploetz, Gordon, & Viljoen, 2011). Members include *F. oxysporum* Schlechtendahl which is economically noted to be very significant. The fungal strains belonging to this genera may either be pathogenic or nonpathogenic (Gordon & Martyn, 1997).

Generally, the genus *Fusarium* consists of numerous plant-pathogenic fungi as first reported by Link in 1809 (Lévesque, Rahe, & Eaves, 1987).

Morphologically, the taxonomy of species in the genus *Fusarium* is based principally on the structure and includes the abundance of their asexual reproductive structures (chlamydospores, phialides, microconidia and macroconidia) and on cultural characteristics (colony texture, colour and cultural aroma)(Gordon and Martyn, 1997).

According to Arias, (2012) Wollenweber and Reinking in the year 1935 were the first researchers who first published a major work on Fusarium taxonomy. They were able to organize about 1000 species of genus Fusarium into 65 species in their book, *Die Fusarien*. The 65 species were reduce to approximately 9 species by Snyder and Hansen in 1940's, but with additional cultivar names which used to differentiate identified strains (Nelson, Desjardins, and Plattner, 1993). Upon studying Wollenweber and Reinking and the Snyder and Hansen systems, Gordon in 1960 published a system that added 26 more Fusarium species. Gordon's taxonomic system was modified in 1971 by Booth by including information on perithecial forms and classification that involves conidiogenous cells and conidiophores (Arias, 2012). In 1983, Nelson, Toussoun, and Marasas developed a taxonomic system for the genus that contained 75 species; their system included taxonomic characters such as macroconidia, microconidia, conidiophores, and chlamydospores (McLean and Lawrence, 1993). The descriptions of Fusarium species by the authors were presented based on the morphological characteristics of the organism and augmented by information based on sexual mating compatibility in addition to their molecular characteristics by the use of variations in their DNA sequences (Arias, 2012). The debate has continued until 2012 when a plea was made by (Geiser, Aoki, Bacon, Baker, Bhattacharyya, et al., 2013) in their paper to maintain the name Fusarium over all closely associated teleomorphic names such as *Heamonectria* and *Gibberella* and has been in use until till date.