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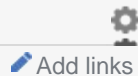
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Metarhizium brunneum

From Wikipedia, the free encyclopedia

[1]

Metarhizium brunneum, is the re-instated name of a group of reassigned *Metarhizium* isolates, previously grouped in the species "*Metarhizium anisopliae* var. *anisopliae*": based on a multigene phylogenetic approach using near-complete sequences from nuclear DNA. It is a **mitosporic fungus** with **asexual reproduction**, which was formerly classified in the form **class Hyphomycetes** of the form **phylum Deuteromycota** (also often called **Fungi Imperfecti**). *M. brunneum* has been isolated from **Coleoptera**, **Lepidoptera**, **Diptera** and soil samples, but a commercially developed isolate (below) has proved virulent against **Hemiptera** and **Thysanoptera**.

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Metarhizium brunneum

Scientific classification

Kingdom:	Fungi
Division:	Ascomycota
Class:	Sordariomycetes
Order:	Hypocreales
Family:	Clavicipitaceae
Genus:	<i>Metarhizium</i>
Species:	<i>M. brunneum</i>

Binomial name

Metarhizium brunneum

Petch, 1935

Standard isolate and characteristics [edit]

Bischoff et al.^[1] state: "There is no viable ex-type culture for *M. brunneum* Petch. However ARSEF 2107 (from Oregon, USA) is considered an authentic strain because the taxon's author, Petch,^[2] identified it and we designate it here as an ex-epitype. ... an ex-epitype (BPI 878297) derived from a living culture (ARSEF 1914) is designated for this taxon." *Metarhizium brunneum* is the most basal lineage in the clade called 'PARB' in which it appears impossible to differentiate isolates of *M. brunneum* from *M. anisopliae*, on morphological characteristics alone (with the exception of the presumptive colour mutant ARSEF 2107).

Conidia typically measure 4.5–8.0 μm long x 2.0–3.0 μm diameter: similar to several other *Metarhizium* species. Petch designated a type collection from the Philippines, which he described as turning brown in mature colonies. This colour variant may occur regularly in nature based on the fact that Petch had identified a number of isolates as *M. brunneum* from geographically distant locations. However it is important to note that the majority of *M. brunneum* isolates examined by Bischoff *et al.* were olive-green in colour (similar to *M. anisopliae*), rather than the buff and tan pigmentation described for the type specimen and the ex-epitype cultures, respectively.

Important isolates [edit]

- Isolate** M.a. 43 (a.k.a. F52, Met52, 029056) primarily infects beetle larvae: and is the active ingredient of 'BIO 1020', originally developed for control of *Otiorhynchus sulcatus* and now 'Met52';^[3] it is still often described in commercial literature as "*M. anisopliae*". Commercial products based on this isolate are subcultures of the individual isolate M.a. 43 and are represented in several culture collections including: **Julius Kühn-Institute** for Biological

Control (previously the BBA), Darmstadt, Germany: [M.a. 43]; HRI, UK: [275-86 (acronyms V275 or KVL 275)]; KVL Denmark [KVL 99-112 (Ma 275 or V 275)]; Bayer, Germany [DSM 3884]; ATCC, USA [ATCC 90448]; USDA, Ithaca, USA [ARSEF 1095].^[4] Granular and emulsifiable concentrate formulations based on this isolate have been developed by several companies and registered in the EU and N. America (US and Canada) for use against **black vine weevil** in nursery ornamentals and soft fruit, other Coleoptera,^[5] **western flower thrips** in greenhouse ornamentals and **chinch bugs** in turf.

See also [edit]

- Biological insecticides



References [edit]

- ↑ Bischoff J.F.; Rehner S.A. Humber R.A. (2009). "A multilocus phylogeny of the *Metarhizium anisopliae* lineage" ↗. *Mycologia*. **101** (4): 512–530. doi:10.3852/07-202 ↗. PMID 19623931 ↗.
- ↑ Petch T. (1935). "Notes on entomogenous fungi". *Transactions of the British Mycological Society*. **19**: 55–75. doi:10.1016/s0007-1536(31)80006-3 ↗.
- ↑ http://www.bioag.novozymes.com/en/products/europe/biocontrol/Pages/default.aspx ↗: accessed: 3/9/2014
- ↑ https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/j.efsa.2012.2498 ↗: accessed: 3/9/2014
- ↑ GVP Reddy; Z Zhao; RA Humber (2014). "Laboratory and field efficacy of entomopathogenic fungi for the management of the sweet potato weevil, *Cylas formicarius* (Coleoptera: Brentidae)". *Journal of Invertebrate Pathology*. **122**: 10–15. doi:10.1016/j.jip.2014.07.009 ↗.

External links [edit]

- Index Fungorum record** ↗, links to a list of synonyms

Taxon identifiers

Wikidata: Q18344065 ↗ · EoL: 189449 ↗ · Fungorum: 259046 ↗ · GBIF: 2562644 ↗ · IRMNG: 10385936 ↗ · MycoBank: 259046 ↗ · NCBI: 500148 ↗ · NZOR: bc02483b-9648-41cd-973e-d56fbe1a9fca ↗

Categories: Clavicipitaceae | Parasitic fungi

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