LTB snow mold is probably not a graminicolous Typhula species'

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Mating tests using dikaryotic isolates of the low-temperature basidiomycete (LTB) and monokaryotic isolates of four species of ***Typhula*** failed to establish a genetical relationship between the LTB and the common graminicolous ***Typhula*** spp. in western Canada.

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Des essais de fecondation par des isolats dicaryotiques du basidiomycète psychrophile et des isolats syncaryotiques de quatre espèces de ***Typhula*** n'ont pas réussi a établir un rapport génétique entre le champignon et les espèces graminicoles courantes de ***Typhula*** dans l'ouest du Canada.

A sterile, low-temperature-tolerant, nonsclerotial basidiomycete, LTB, the cause of extensive damage to grasses and alfalfa in Alberta (1), was later reported from grasses, cereals and forage legumes in all the western provinces of Canada, and Alaska (3, 5). Attempts to induce the production of sclerotia, fruiting bodies, and spores have failed; (1, 5, and Dr. M. W. Cormack, personal communication 13 September 1976; Smith unpublished). Characteristic clamp connections which are frequent in rapidly growing mycelium indicate that the fungus is a basidiomycete. Broadfoot and Cormack (1) suggested that the LTB might be related to ***Typhula*** but since there were no sclerotia it was not one of the ***Typhula*** spp. that had been studied by Remsberg (4). However, some isolates of a typhula snow mold, common in western Canada, designated at present ***'Typhula*** FW (5) and considered (Arsvoll and Smith unpublished) to be a new, morphologically distinct variety of ***Typhula ishikariensis*** Imai produce abundant fluffy, near-white aerial mycelium like that of the LTB. Some isolates of T. ***ishikariensis*** Imai, ***T. idahoensis*** Remsberg, and especially T. ***incarnata*** Lasch ex Fries found in North America are shy sclerotium producers especially after repeated subculturing (Smith unpublished). Their mycelium may turn gray on diseased plants like that of the LTB. Therefore it seemed possible that the LTB might be a ***Typhula*** sp. which, in the course of evolution in geographical and climatic isolation in western Canada, had lost the ability to sporulate or produce sclerotia.

Attempts were made to establish a genetical relationship between the LTB and ***Typhula*** spp. found in western Canada. Monokaryotic testers of graminicolous ***Typhula*** species used in other genetical studies were paired with dikaryotic isolates of the LTB from various hosts using the "di-mon" mating technique of Bruehl et al. (2). Five dikaryotic isolates of the LTB, two from turfgrass, two from rye, and one from alfalfa, were paired with each of four tester monokaryotic isolates of one isolate of T. ***ishikariensis,*** one isolate of T. ***idahoensis,*** two isolates of ***Typhula*** FW, and two isolates of T. ***incarnata.***

In no case did any mating occur, as indicated by the absence of clamp formation in the monokaryotic testers. It seems unlikely that the LTB is related to the common graminicolous ***Typhula*** spp. in western Canada.

Literature cited

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