Glucans in the hyphal walls of fungi have been under study in several laboratories as possible elicitors of the hypersensitive reaction typical of many incompatible host-pathogen interactions. Much of the work to date has centered on *Phytophthora megasperma* var. *sojae*, *P. infestans*, and *Colletotrichum lindemuthianum*. The glucans from hyphal walls of various races of these fungi were previously shown to be active mainly in their respective hosts: soybeans, potatoes, and beans. However, A. J. Anderson reports that glucose from hyphal walls of *Fusarium oxysporum* f. sp. *lycopersici* and *F. oxysporum* f. sp. *cubense*, pathogenic on tomatoes and bananas, respectively, was nearly as effective as glucans from *Colletotrichum* spp. at eliciting a resistance-type response (browning and phytoalexin production) in green bean hypocotyls. In addition, tomato fruit and stem tissue showed browning and phytoalexin production in response to spores of *F. oxysporum* f. sp. *cubense* but not to glucans from either *Fusarium* or *Colletotrichum*. The author suggests that glucan recognition is not the only mechanism responsible for initiating the resistance response. (Can. J. Bot. 58:2343-2348)

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Reclassification of the Chytridiales and erection of a new order, Spizellomycetales, has been proposed by Donald S. S. Barr on the basis of fundamental differences in ultrastructure of the respective zoospores. The differences between members of the Chytridiales and members of the Spizellomycetales are: 1) ribosomes packaged in the core of the zoospore by a double-membrane system vs. ribosomes dispersed in the cytoplasm; 2) a single laterally placed lipid globule vs. a varying number of anteriorly placed lipid globules; 3) a rumposome vs. no rumposome; 4) microtubules originating from the side of the kinetosome, running parallel to each other, and extending to the rumposome vs. microtubules radiating in the zoospore body from the kinetosome; 5) mitochondria intimately associated with the microbody-lipid globule complex vs. mitochondria not intimately associated with that complex; 6) the nucleus appearing to occupy any available space vs. the nucleus morphologically associated with the kinetosome; and 7) the nonfunctional centriole lying parallel to the kinetosome vs. the nonfunctional centriole lying at a distinct (sometimes 90°) angle. *Olpidium* is classified in the Spizellomycetales and *Chytridium* and *Synchytrium*, in the Chytridiales. (Can. J. Bot. 58:2380-2394)

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That the root systems of conifer species quickly lose ability to support ectomycorrhizae after tops are removed must be considered in management schemes for early conifer regeneration in clear-cuts, report A. E. Harvey, M. F. Jurgensen, and M. J. Larsen. Ectomycorrhizae survived on residual roots only until July in forest stands that had been clear-cut the previous October. Mycorrhizal activity was reduced by clear-cut burn about 7.6 m into an adjacent uncut stand, and mycorrhizae were found only 1.5 m into a clear-cut, broadcast-burned area from an adjacent uncut stand 2 yr after clear-cutting. The authors suggest that cutting be done in late fall or winter; that burning be avoided; that clear-cuts be small, circular, and well spaced; and that replanting be done in early spring or the season after cutting. (Can. J. For. Res. 10:300-303)

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Many species of plant-parasitic nematodes with no specialized survival structures are nevertheless able to persist for long periods in soil, without host plants. Examples are nematodes of the Longidoridae, ie, *Xiphinema* and *Longidorus*. D. G. McNamara reports that *X. diversicaudatum* is aided by a "survival factor" in soil that is destroyed by heat above 60 C and by fumigation with DD, is not eliminated by drying or extensive soil washing, and passes through a 50-μm-aperture sieve. The author suggests that the factor is a microorganism that induces partial quiescence in nematodes. (Nematologica 26:170-181)

□ □ □

Breeding for high levels of N_2 fixation in alfalfa could increase susceptibility of the crop to bacterial wilt (*Corynebacterium insidiosum*), according to D. R. Viands, D. K. Barnes, and F. I. Frosheiser. Correlation between susceptibility in alfalfa to bacterial wilt and acetylene reduction rate and nodule mass was significant for a gene pool where resistance to wilt was conditioned by an additive resistance but was not significant in a second pool with a dominant gene for resistance. The authors indicate that plant breeders should use the dominant (BW_1) source of resistance to wilt when breeding for high levels of N_2 fixation in alfalfa. (Crop Sci. 20:699-703)

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Disease resistance based on incompatibility between barley and the powdery mildew pathogen results in a sharp increase in respiration during the first 24–48 hr after inoculation, then a rapid decline. In compatible combinations, however, increase in respiration starts about 3 days after inoculation and increases slowly. Similar trends were noted with incompatible and compatible barley and *Pyrenophora teres* combinations. V. Smedegaard-Peterson suggests that incompatible interactions increase the demand for host energy and ultimately lead to lower yields, compared with resistant plants not challenged by avirulent inoculum. (Phytopathol. Z. 99:54-62)

Recent reports from fields related to plant pathology for inclusion in *Scientific News* may be sent to R. James Cook, 367 Johnson Hall, Washington State University, Pullman, WA 99164.