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Syringic Acid Metabolism by Some White-Rot, Soft-Rot, and Brown-Rot Fungi

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ABSTRACT

Syringic acid metabolism by four white-rot, two soft-rot, and two brown-rot fungi has been studied.

The pathways for syringic acid metabolism have been studied in detail for the white-rot fungus, *Sporotrichum pulverulentum*, and a reaction sequence proposed. According to identified metabolites, the following reactions occur: reduction of the carboxyl group, hydroxylation and simultaneous decarboxylation, demethylation, and methylation of the *p*-hydroxyl group.

In the case of the two soft-rot fungi, *Petriellidium boydii* and *Phialophora mutabilis*, rapid metabolism of syringic acid was observed, and the medium was depleted of the acid within 12 h. The formation of trimethoxybenzoic acid indicates an ability within the soft-rot fungi also to methylate the *p*-hydroxylic group.

The two brown-rot fungi, *Daedalea quercina* and *Fomes pinicola*, were poor metabolizers of syringic acid. However, demethylation was observed with *F. pinicola* and an unidentified product appeared in the culture solution of *D. quercina*.