
(Populus deltoides Barter. Ex Marsh)

Coriolus

CCA

versicolor (L.:Fr.) Quel.

(Coriolus versicolor)

CCA . () CCA *(Populus deltoides)*

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DIN 52176 B.S.838:1961

Kolleschal

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CCA

CCA

(Coriolus versicolor)

(Populus deltoides)

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(*Populus deltoides*)

B.S.838:1961 DIN 52176

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Kolleschale

(*Coriolus versicolor*)

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(*Coriolus*

versicolor)

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Finally

(*Populus deltoides*)

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CCA

(*Coriolus versicolor*)

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7-British Standard 833,1961. Methods of test for toxicity of wood preservatives to fungi.

8-Davidson, R.W & W. A. Campbell & D. J. Blasidell, 1938. Differentiation of wood decaying fungi by their reaction on gallic or tannic acid medium. J. agric. Res, 57, 683-695.

9- Findly, W. P. K. 1967. Timber pests and diseases.

10-Michael J Larsen & Rita M Rentmeester, 1992. Valid names for some common decay fungi and their synonyms. 23rd Annual Meeting Harrogate, UK.

11-Standard DIN 52176, September 1972.

12-Willeitner, H. 1965. (Uber die mykologische prufung) Von Holz Spanplttten material pruf, 7(4).

Evaluation of Durability of Poplar (*Populus deltoides* Barter. *Ex Marsh*) Wood Against *Coriolus versicolor* (L.:Fr.) Quel. in Natural State and Treated with CCA

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Abstract

In this study, the influence of the fungus *Coriolus versicolor* on the durability of sapwood and heartwood of Poplar (*Populus deltoides*) in natural state and treated with CCA (Copper/Chromium/Arsenic) was evaluated. CCA is a kind of water borne preservatives which was used in this study for treating specimens under vacuum and pressure (Bethel procedure) at 3 percent concentration. In order to conduct this evaluation, Kolleschale method according to DIN 52176 and B.S. 838: 1961 was used in a completely randomized block design. Specimens were contaminated with cultured fungus for fourteen weeks (24°C, 75% relative humidity). After this period, weight reduction, Compressive strength (Parallel to grain) and hardness of specimens were measured. Weight reduction of heartwood was higher than sapwood and that of control samples were much higher than treated ones. Compressive strength (Parallel to grain) of sapwood was higher than heartwood and that of treated samples higher than control samples but regardless of influence of fungus, CCA reduced the compressive strength. There was no significant difference between the hardness of sapwood and heartwood, but hardness of samples were higher than control samples but regardless of fungus, CCA increased the hardness.

Keywords: *Populus deltoides*, *Coriolus versicolor*, Sapwood, Heartwood, Natural durability, Compressive strength, Hardness, Bethel method.

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