

Thesis Title Improvement of Gray Oyster Mushroom [Pleurotus ostreatus (Jacq. ex. Fr.) Kummer] by Means of Hybridization

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Abstract

Improvement of Pleurotus ostreatus mushroom cultivar was done through mono-mono and followed by dimon crossing. Original dikaryonic cultivar used were CM5 (Winter, Gray or German type) and KDCM4(A4) (hybrid of winter type and florida or summer type). Additional dikaryonic varieties used were KD1, KD2, KDCM2, KDCM3 and KDCM4.(A4)

Mono-mono crossing was made from 16 x16 monospore mycelium collected from CM5 and KDCM4(A4). A total of 256 combinations were made ; 107 lines had clamp connection ; 15 lines produced fruit bodies with only 9 lines of dikaryons produced good quality and morphology . When all nine dikaryons (Lines 1-9) were tested in the field, Line 1 was found to give the highest yield.

Dimon crossing was made from 11 dikaryonic myceliums (the highyield F1 of Lines 1-6) and all the 5 original varieties intercross with 20 selected monokaryonic mycelium of Lines 1 . There were 11 x 20 =220 lines of dimon crossing combinations. Nine lines (Line 1-9) were selected for the quality needed.

When yield test of the nine selected lines or varieties were compared with their original parents (CM5 and CM1, white or summer or florida type oyster mushroom) at room temperature. It was found that CM1 not adapted florida type, gave the highest yield. The second best came from 3 hybrids of dimon crossing. Yield levels of the three hybrids were approximately the same level as CM5 grown in the cool room.