عنوان مقاله:

Recycling spent Pleurotus eryngii substrate supplemented with Tenebrio molitor feces for cultivation of Agrocybe chaxingu

محل انتشار:

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خلاصه مقاله:

Purpose In the industrialized production of mushrooms usuallyonly one flush of fruitbody is harvested, so that nutrientsand energy in the substrate is not fully exploited. In this study,the spent Pleurotus eryngii substrate was recycled for thecultivation of Agrocybe chaxingu under ambient temperature.Method Six formulae were tested: (1) Control: 98% spentsubstrate, 1% sucrose, 1% lime; (2) Control 10% wheatbran; (3) Control 20% wheat bran; (4) Control 10%T. molitor feces; (5) Control 20% T. molitor feces; (6)Control 10% wheat bran 10% T. molitor feces.Results Two flushes of fruitbody were harvested, thecontrol substrate resulted in a biological efficiency of40.42%; the formulae with supplementation of 10% wheatbran, 20% wheat bran and 10% T. molitor feces significantlyincreased biological efficiency to 52.50, 54.61 and51.56%, respectively, and supplementation of 20% T.molitor feces, or 10% wheat bran plus 10% feces furthersignificantly increased biological efficiency to 62.95 and61.10%, respectively. All supplemented substrates hadsignificantly higher cellulose and laccase activity than theControl (cellulase 0.10 U/g; laccase 41.00 U/g), whichwere 10% wheat bran (0.15 U/g; 72.67 U/g), 10% T.molitor feces (0.17 U/g; 98.33 U/g), 20% wheat bran (0.22U/g; 76.00 U/g), 20% T. molitor feces (0.27 U/g; 87.00U/g), 10% wheat bran plus 10% T. molitor feces (0.25 U/g;97.67 U/g), respectively.Conclusion Spent Pleurotus eryngii substrate waspromising for cultivation of Agrocybe chaxingu, especiallywhen supplemented with 20% T. molitor feces, or with10% T. molitor feces plus 10% wheat bran.

کلمات کلیدی:

Spent mushroom substrate Fruitbody Biological efficiency Cellulase Laccase