Recycling of spent shiitake substrate for production of the oyster mushroom, Pleurotus sajor-caju.

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Abstract: Pleurotus sajor-caju was produced on a basal medium containing "spent" shiitake substrate plus 10% wheat bran and 10% millet. An analysis of the fibrous composition of the spent shiitake substrate revealed that 85% of the original hemicellulose, 44% of the original cellulose and 77% of the original lignin was not consumed during production of a full crop (78% biological efficiency) of shiitake (63-day harvest period). To produce P. sajor-caju, the spent shiitake substrate was ground, air dried, supplemented, pasteurized with live steam and spawned. Highest yields (79% biological efficiency) of P. sajor- caju were obtained by supplementing the spent shiitake basal medium with 12% soybean and 1% CaCO3. Increases in percentage biological efficiency and mushroom size were positively correlated with increasing levels of CaCO3 added to the basal medium.