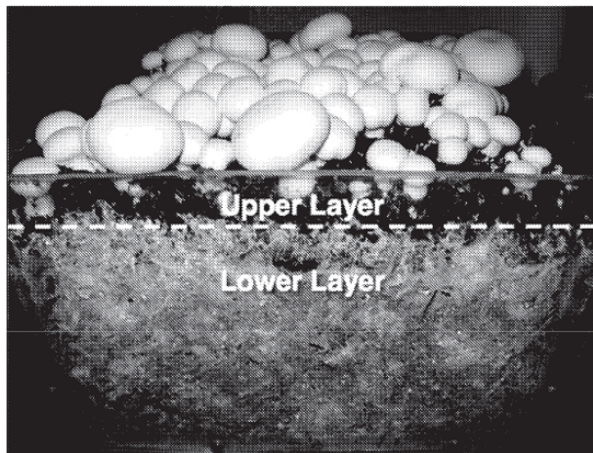


# Engineering Better Mushrooms: Transgenic Manipulation of Filamentous F

ID# 2010-3670



Cultivation Scheme for Button Mushroom

## Technology Summary

Through advancement in transgenic manipulation, genetic engineering techniques can be used to manipulate filamentous fungi for 1) ease of cultivation or production; 2) improved culinary, medicinal, or nutritional value; and 3) production of recombinant proteins for harvest. The proposed technology enables the transgenic modification of a mushroom-forming fungus to confer a transgenic genotype and/or phenotype by independently controlling each. In transgenic breeding of mushrooms, it is possible to manipulate the fruiting body of a fungus, conferring an altered phenotype but having a wild-type genotype. The fruiting body is devoid of the cognate transgene, making it suitable for the marketplace.

## Application & Market Utility

Genetic transformation holds enormous potential for crop improvement, but GMOs are not currently preferred in the marketplace. This invention maintains the genotype of the budding fruit, while changing the phenotype to increase yield, resistance, and shelf life. A bisporus can be used for express recombinant proteins for biopharmaceuticals and industrial enzymes. The traditional approach to genetic modification fails to achieve high-level expression of the protein. This invention maintains the genotype of the budding fruit for higher levels of protein production.

## Next Steps

Seeking research collaboration and licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

### Seeking

Investment | Licensing | Research

### Keywords

- Mushroom
- Fungi
- Transgene
- Phenotype
- Proteins

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