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**Position of the
Mushroom Breeding and Spawn Industry
on
Essentially Derived Varieties in Button mushrooms**

Introduction

The European Union law system allows the protection of edible mushroom varieties by Community Plant Variety Rights (CPVR), and several titles of protection have already been granted for mushroom strains in the recent past. In this system, copies are clearly defined as infringements of the Intellectual Property of the holder of the rights.

However, the generation of so-called Essentially Derived Varieties (EDV) may hamper the development and commercial release of new button mushroom varieties, and an agreement of the mushroom industry on how to deal with this subject is therefore highly desired.

Therefore, a working group has been established, representing the European Mushroom Breeding Industry, and which focusses on the CPVR-related issues in button mushrooms (*Agaricus bisporus*) in Europe. L.F. Lambert Spawn Co. Inc. is a member of this working group and underlines the importance of a good strain protection system in mushrooms

The 1991 Act of the Convention for the Protection of New Varieties of Plants (UPOV) states that the scope of protection of a plant variety should also extend to

a) i) varieties which are essentially derived from the protected variety, where the protected variety is not itself an essentially derived variety.

Moreover, in Article 14 (5 b) the following provisions are made:

b) For the purposes of subparagraph (a) (i), a variety shall be deemed to be essentially derived from another variety ("the initial variety") when

- (i) it is predominantly derived from the initial variety, or from a variety that is itself predominantly derived from the initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety,*
- (ii) it is clearly distinguishable from the initial variety and*
- (iii) except for the differences which result from the act of derivation, it conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety.*

This concept of an EDV has been transposed into the European legislation on plant variety protection (EC Regulation no. 2100/94) and into the plant variety protection acts of the magnitude of EU Member States.

Positions

L.F. Lambert Spawn Co. Inc. takes the following positions on EDV:

1. Under the European regulations, edible mushrooms may be subject to CPVR. Therefore, where “*plant*” or “*plants*” are mentioned in UPOV 1991, this should be read as “mycelium or mushrooms”. In congruence, where “*planting*” is written, this should be read as “cultivating”. Further terminology is in congruence with UPOV 1991 and its addenda.
2. The EDV concept does not cover the problem of plagiarism (or strain copies), which is in all cases covered by the CPVR. A strain copy is a direct somaclonal tissue culture of any structure of the initial strain that have not been subject to further natural or induced genetical adjustments, such as, but not limited to, recombination, mutation or crossing.
3. The selection methods named in Article 14 (5) (c) of UPOV 1991 (*selection of a natural or induced mutant, or transformation by genetic engineering*) do indeed often, but not automatically, result in an essentially derived variety. This is an open list which does not exclude that also other methods may likely result in essentially derived varieties provided that such methods include in any case the physical use of the initial variety or both its parental constituents.
4. The generation of a new variety exclusively by selection of spores out of an initial variety is explicitly regarded as a method to obtain EDVs. This includes the generation of new varieties out of an initial variety by developing multispore cultures or selecting fertile single spore cultures. This type of selection from an existing variety is a quick and easy method to generate small adaptations to the first variety (Sonnenberg *et al.*, in prep.). Strains developed in this method have a genetic content that is very similar, to the mushroom that has produced these spores.
5. An EDV in button mushrooms is, next to a strong resemblance in phenotype, chiefly characterized by a high genetic similarity to the initial variety. The European Mushroom Breeding Industry supports a reversal of the burden of proof in favour of the holder of the CPVR of the initial variety once phenotypic similarity between the initial variety and a suspected essentially derived variety is observed. At first observation of phenotypic similarity, the breeder of an initial variety can request the owner of suspected essentially derived variety to prove that the new strain was not generated by exclusively using the initial variety, and thus is not an EDV.
6. The breeder of an EDV must have an explicit authorization from the initial breeder before exploiting the EDV variety, as listed in the European legislation on plant variety protection (EC Regulation no. 2100/94). This exploitation includes, but is not limited to: production of spawn or other carriers of the strain, multiplication and selling of the mycelium on compost or whatsoever medium, selling and/or marketing of fruiting bodies, and importing to and exporting from the Community of the mycelium on whatsoever carrier. This system is aimed at rewarding the work and financial effort done by the initial breeder, and at supporting further breeding efforts.

7. The common practice of breeders' exemption (Art 15 of EC 2100/94) prevails, and the opinion of the European Mushroom Breeding Industry is that breeders are allowed to use protected varieties as sources of initial variation to create new varieties of button mushrooms, or for other experimental purposes, in congruence with UPOV 1991.

8. The statements in this position paper refer explicitly to the protection of new varieties that will be generated and released to the market after April 2014. Derived strains that were available on the market before April 2014 are not within the scope of this position paper. It is however free to derive strains from strains for which no CPVR apply.

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