Protocol for the standardised evaluation of the susceptibility of grape varieties to *Botrytis* bunch rot

Background

The grape varieties in the WiVitis Interreg project are being analysed with regard to their susceptibility to *Botrytis* bunch rot. The aim is to assess the influence of (i) the environment and (ii) the berry skin characteristics on the susceptibility of grape varieties. To this end, berries and grapes in various vineyards and greenhouses in the Upper Rhine region will be harvested by the project partners at different stages of grape development and tested under standardised conditions.

Grape material

(1) Single berries (with berry stem) from the outdoor field **or**
(2) bunches on potted plants in the greenhouse

Ripe berries without (left) & with *Botrytis* infection (right)

Fungal cultures of *Botrytis cinerea* (grey mould)

(1) Mixed culture from the own vineyard **or**
(2) two *Botrytis* isolates with different levels of aggressiveness

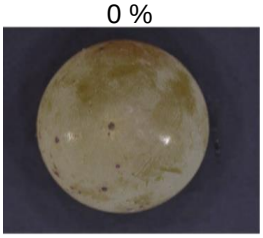
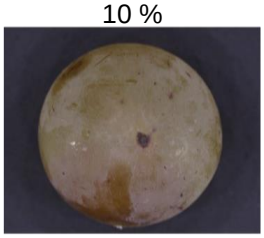
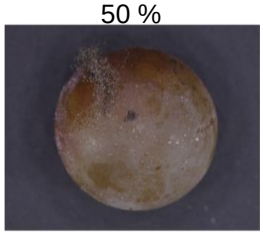
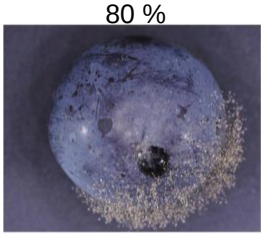
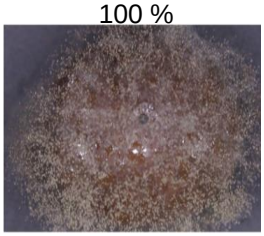
The fungus is cultivated on an artificial culture medium, e.g. potato dextrose agar, and propagated every fortnight. Cultivation takes place in the dark at room temperature, i.e. at approx. 21°C.

Fungal inoculum

The fungal inoculum is a so-called spore suspension and contains approx. 10,000-20,000 fungal spores per mL of water. For this purpose, the oval Botrytis spores are washed off the fungal culture and counted.

Test method and evaluation

To initiate an infection artificially, the fungal inoculum is applied to the healthy, undamaged grape material by dripping or spraying. This is known as inoculation. The individual berries or bunches are then incubated at room temperature and a very high humidity of >80 % relative humidity for seven days. These are the optimum growth conditions for *Botrytis*, allowing a very high infection pressure to be generated. After the incubation period, the infestation of the individual berries or grapes is assessed. This is done either on the basis of a 5-class score (1, no infestation to 9, very high infestation) or on the basis of the percentage of infestation.

Class 1 0 %	Class 3 10 %	Class 5 50 %	Class 7 80 %	Class 9 100 %
				
Healthy - no visible infestation	Areas with brownish discolouration (without wounds) **or** burst berry skins	Fungus mycelium visible with the first spores	Half of the berry infected, fungus spores clearly visible	Whole berry is infected, fungus spores clearly visible

WiVitis
Interreg
Kofinanziert von der Europäischen Union
Cofinancé par l'Union Européenne
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