THE ISOLATION AND CHARACTERIZATION OF THE MAIN MOULD SPECIES FROM THE WINEGROWING AREA BANU MARACINE

IZOLAREA ŞI CARACTERIZAREA UNOR SPECII DE MUCEGAIURI DIN ECOTOPUL VITICOL BANU MĂRĂCINE

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Abstract. *The moulds are sapropphyte fungi with high degradation power of the substrate. These fungi agree as habitat the grape berries in different development stages, but most frequent during the maturation phase. In this phase the berry lose from the vitality and the peel become more fragile, thus under the action of rainfall or wind, many berries fall on the soil becoming an excelent developing substrate for all the microorganisms species. In the laboratory we have set an experiment for testing different composition of culture media necessary for the isolation of the mould species found in the soil samples, the control variant being the sterilized distilled water, in a sterile Petri plate, where has been inoculated mould spores.*

Rezumat. *Mucegaiurile sunt fungi saprofiți dotați cu o mare putere de degradare a substratului. Aceşti fungi agrează ca habitat boabele de struguri aflate în diferite stadii de dezvoltare, dar cel mai frecvent în cursul fazei de maturare. În această fază, bobul îşi mai pierde din vitalitatea sa şi pieliţa devine mai fragilă, astfel că în urma unor ploi sau vânturi, multe boabe de struguri cad pe sol devenind un excelent substrat de dezvoltare pentru toate speciile de microorganisme. În laborator am efectuat un experiment pentru a testa diferite compoziții a unor medii de cultură necesare izolării speciilor de mucegaiuri găsite în probele de sol, repetiția martor fiind apa distilată sterilizată simplă, pusă într-o placă Petri sterilă, în care au fost inoculați spori de mucegai.*

The research has been made at the Didactical Station Banu Maracine, and has focused on the identification of the main mould species that can affect the wine during the fermentation process. During 2007 in the winegrowing center Banu Maracine there has been collected samples from the grapes and soil. These samples has been analyzed in laboratory in order to a corect identify of the mould species.

MATERIALS AND METHODS

During 2007 in the winegrowing center Banu Maracine there has been collected samples from the grapes and soil. These samples has been analyzed in laboratory in order to a corect identify of the mould species, that can affect the wine during the fermentation process.

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samples, the control variant being the sterilized distilled water, in a sterile Petri plate, where has been inoculated mould spores. After 16 hours of incubation at 28°C, we have observed mould hyphe developed on the plates lied oriented toward the dense area of the disttiled water condense period.

RESULTS AND DISCUSSIONS

For the isolation and purification of the moulds culture in laboratory, there has been used minimal solid medium YPD on which has been inoculated (fig. 1) the spores collected during the separation phase of the yeast cells (endogenous multiplication) or through the inoculation of the oidium article (fig.2) separated from the hyphe.

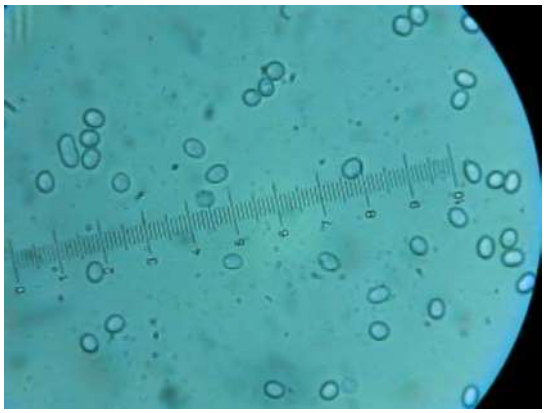

Fig. 1. Pure spores culture of the species *Mucor* (Banu Mărăcine, 2007)

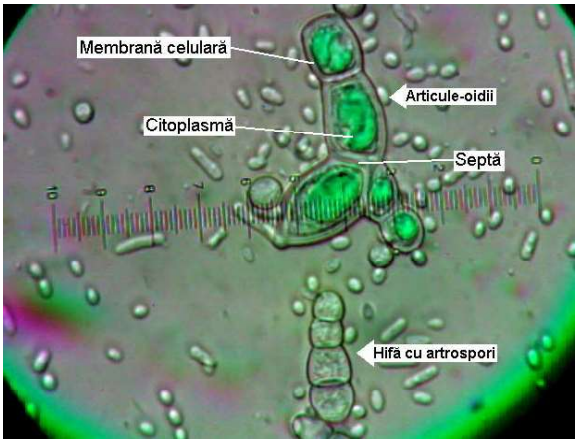

Fig. 2. Hyphe fragments collected in order to innoculate on solid medium (Banu Mărăcine, 2007)

The identification of the different mould species has been made through morphological analyze of the developed culture, focused on the distinct biological elements: the shape and dimensions of the hyphe, the shape and dimensions of the

spores, the structure of the biological multiplication elements (artrospores, blastospores, clamidospores, sterigma, etc.).

On solid medium, the species *Aspergillus* has developed colonies with white micelium which quickly become pale yellow and finally grey-black due to the maturation of the sterigma (fig. 3). The species it's recognized by the conidiophore finished with inflated vesicula on which are the phialides (sterigma) broom shape. The spores have different colours, depending on the species being produced in the long chanels at the end of philides.

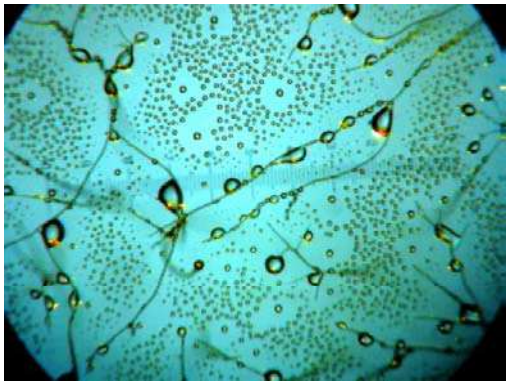

Fig. 3. Hyphe of the species *Aspergillus niger* (Banu Mărăcine, 2007)

The species *Penicillium* formed green colonies characteristic to the conidia (fig. 4). The ramificated part of the phialides, developed at one terminal of the stipes, it's the biological system on which the species can be recognized and morphological identified using a microscop. *Penicillium* can form three types of spores, produced by the ramificated system (penicyles) and are named mono-verticilated, bi-verticilated respectively tri-verticilated. It's the most spreaded species of mould in the soil of the viticultural ecosystem Banu Maracine and the most harmful for the vinification process.

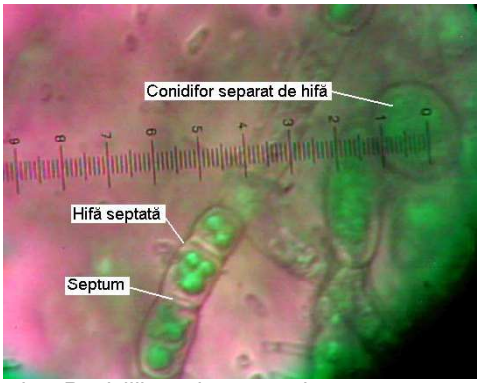

Fig. 4. Septate hyphe, *Penicillium chrysosporium* (Banu Mărăcine, 2007)

The species *Mucor* (fig. 5) develop very rapid a white micelium which become gre due to the abundence of the sporangiophores verticals, spherical, where the spores are produced.

Fig. 5. Non-septate hyphe, *Mucor racemosus* (Banu Mărăcine, 2007)

CONCLUSIONS

During 2007 in the winegrowing center Banu Maracine, based on the samples collected from grapes and soil, there has been identified the follwing mould species: *Aspergillus niger, Penicillium chrysosporium, Mucor racemosus*.

From the mould species identified in the winegrowing center Banu Maracine *Penicillium chrysosporium* it's the most spreaded species of mould in the soil of the viticultural ecosystem Banu Maracine and the most harmful for the vinification process.

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