INTRODUCTION:
Downy mildew is one of the most destructive diseases of grapevines occurring in most grape-growing areas of the world. It is caused by the obligate oomycete Plasmopara viticola, resulting in severe production reduction due to cluster destruction and decrease of wine quality due to fallen foliage (Figure 1).

SPORANGIA FORMATION:
The effects of different light treatments (24 h light, 24 h dark, and 12 h light followed by 12 h dark), different temperatures (15°C, 20°C, 25°C), different humidity levels (100%, 85%, 66%) and different nutrients availability (2% lactose, 2% sucrose and 2% glucose) on sporangia formation were determined by scoring the percentage of diseased spots compared to all spots of the whole leaf inoculated with the same volume of sporangia suspension. Results showed that the best conditions for sporangia formation were at 20°C under the dark, 100% humidity, and with 2% lactose supplemented in the sporangia suspension (Figures 2-4 and Table 1).

SPORANGIA GERMINATION:
To study the optimum conditions for sporangia germination, treatment either at low (4°C) or room temperature (RT) during 30 min before inoculation, nutrient availability (2% lactose and sterile distilled water), and illumination periods (24 h light, 24 h dark, and 12 h light followed by 12 h dark) were evaluated. The germination rate was determined on water agar. Results showed that optimum conditions for sporangia germination were availability of 2% lactose, stimulation at 4°C for half an hour, and incubation at 15°C under dark (Table 2).

CONCLUSION:
The best conditions for sporangia formation are: 20°C under the dark, 100% humidity, and availability of 2% lactose in sporangia suspension. The optimal conditions for sporangia germination are: 2% lactose, stimulation at low temperature for half an hour, and at 15 °C under the dark.

REFERENCES:

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