

Sugar content in grape fruit after application of mycorrhizal inoculum to the root under conditions of growth in the field in Hungary

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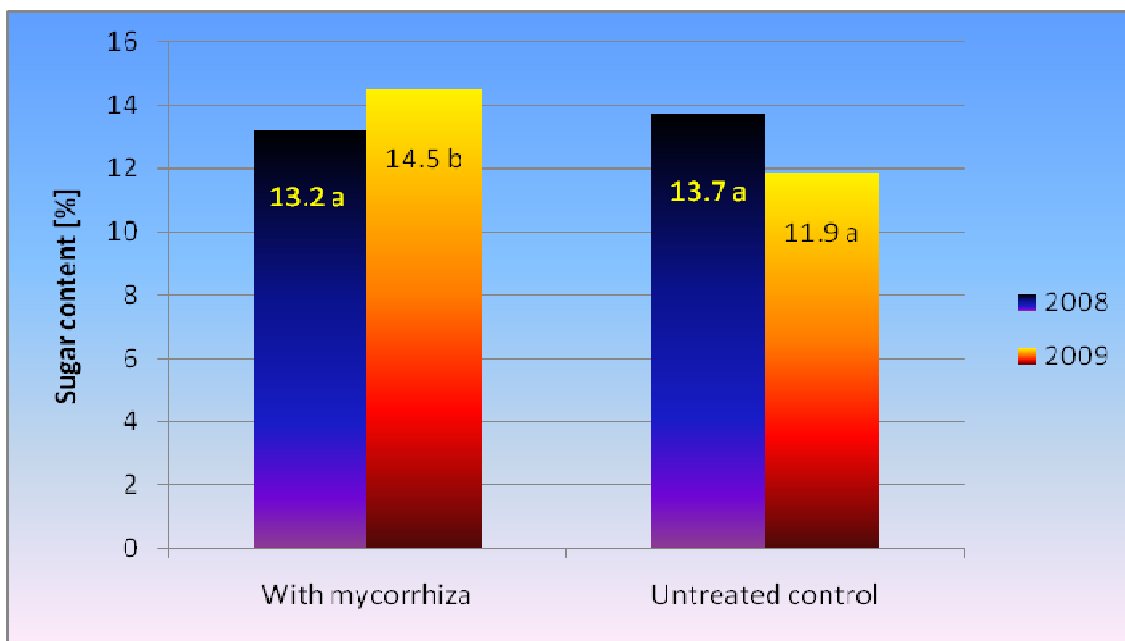
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Field experiment was established in the spring 2008 in two vineyards in Hungary. The first experimental site was eight years old plantation of grape cv. „Panonia Treasure”. Plants had cut of root system in the middle of each inter-row. In this place mycorrhizal inoculum MIX which was a mixture of four studied fungi was injected. In the year of application no significant differences in sugar content was found. In the next season significantly higher sugar content was found under the effect of MIX inoculum comparing to the untreated control.

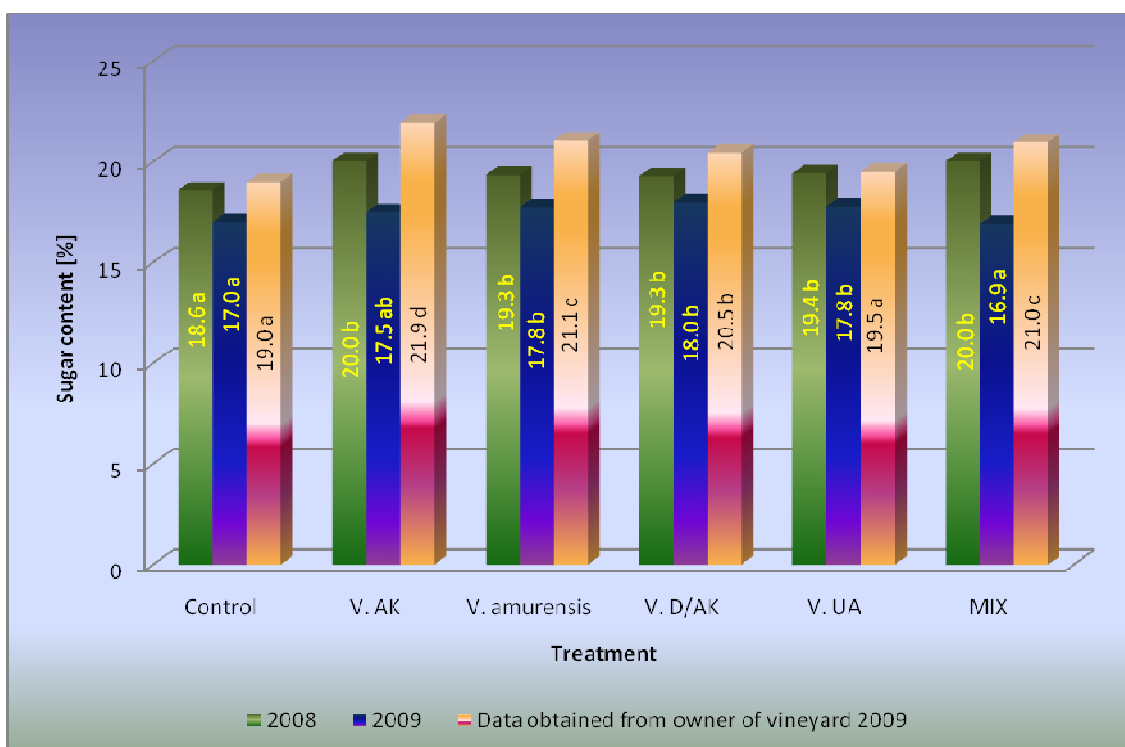
In the second experimental site two-years old grapes cv. “Palatyna” were treated. Five experimental treatments with mycorrhizal fungi and untreated control were used. In the first year after treatment increase of sugar concentration by 3.8 % was noted for the treatments *V. amurensis* and *V. D/AK*. For treatments MIX and *V. AK* the increase of sugar content amounted to 7.5 %. Differences were proved by statistical test (Fig. 2). In the second year of experiment the statistically proven increase of sugar content by 5.9 % was found for the following treatments: *V. amurensis*, *V. D/AK* and *V.UA* and it amounted. It should be mentioned that the measurements were done at the beginning of the phase of fruit ripening (on 5th August 2008) not at the technological maturity. Measurements done by the owner of the vineyard on 30-31st August 2008 have shown that increase of sugar content by 15 % is possible (at the absolute numbers terms it was 2.9 %). In the three weeks differences for the best treatment amounted above 25 % - increase of sugar content from 17.5 to 21.9 %.

Obtained results show high potential of studied fungal isolates. Observations and measurements will be continued and results will be published.



Data with the same letter are not significantly different at the significance level of 0.05

Fig. 1. Sugar content in the fruit cv. "Panonia Treasure" in seasons 2008 and 2009



Data with the same letter are not significantly different at the significance level of 0.05

Fig. 2. Sugar content in the fruit cv. "Palatyna" in seasons 2008 and 2009