



Investigations into the influence of organic fertilizer on the nitrogen content in the soil and the musts of grapes from the varieties 'Blauburger', 'Pinot noir', 'Blaufränkisch' and 'Riesling'

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The influence of compost and of a Commercial organic fertilizer based on malt sprouts and vinasse on the nitrogen content in the soil and must, on the humus content and on maturity and yield was determined with four grapevine varieties in two experimental plots over a period of five years. In the year 2008 before application of organic fertilizers humus content was between 2.7 % and 3.8 %. In 2012 the values were between 2.3 % and 3.9 %. All values corresponded to the content level 'medium'. In one experimental plot humus content in the topsoil of the control variant and the variant with the Commercial organic fertilizer decreased over the period 2008 to 2012, whereas it remained unchanged in the compost variant. In the topsoil of the other experimental plot an increase of humus content in the compost variant was observed over the period 2008 to 2012. The content of Mineral Nitrogen in the soil (0 to 60 cm) was influenced by the sampling date, the weather conditions and the trial variant (control, compost, Commercial organic fertilizer). During the five years of Research the extrapolated content of Nitrogen in the soil was between 9 and 122.5 kg/ha, resp., 8 and 110 kg/ha in the two plots. In one plot in the control variant the mean value of total mineral nitrogen content per hectare of all sampling dates of all years was 33.2 kg/ha which was statistically significantly lower than the value of the organic commercial fertilizer variant with 51.2 kg/ha. The mean value of the total mineral nitrogen content of the compost variant of all sampling dates of all years was 37.7 kg/ha. In the soil of the second plot the highest mean value of total Mineral Nitrogen was determined in the organic Commercial fertilizer variant with 44.3 kg/ha. In the compost variant this value was 30.3 kg/ha and in the control variant 33.1 kg/ha. With the organic fertilizer variant, effects on the Nitrogen content in must were observed. In 2008 in the compost variant an increase of Nitrogen content was recognised in the must of the Grape variety 'Pinot Noir'. In 2009 an increase of Nitrogen content in the must of the Grapes of the 'Pinot Noir', 'Riesling' and 'Blauburger' varieties with both fertilizer variants and in 2010 an increase of Nitrogen content in the must of all four varieties and with both fertilizer variants was found. In 2011 an increase of Nitrogen content in the must of 'Blauburger' and 'Blaufränkisch' with both fertilizer variants and in 2012 an increase of Nitrogen content in the must of the three red wine varieties and with both fertilizer variants was found. Whereas the organic Commercial fertilizer primarily contributed to the Nitrogen supply to the vines, the compost did not only positively influence the Nitrogen supply to the vines, but also contributed to the stabilization of humus or even led to an increase of the humus content.