

Copia do resumo apresentado

XI Orchard Systems Symposium "Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems" Bologna, Aug. 28 – Sept. 2, 2016

Nitrogen Fertilization of Chardonnay Grapevine: Yield, Must Composition and their Relationship with Temperature and Rainfall

Keywords: *nitrogen, nutritional status, vineyard*

Clay soils with high organic matter content in Southern Brazil were planted with grapevines. However, because of the low temperatures, the mineralized N of organic matter does not always meet the N demands of the grapevines. Therefore, N application is necessary, but the best N rate for achieving satisfactory yields and desirable grape enological composition is not known. The study aimed to evaluate yield and must composition in grapevines subjected to N application and to relate them to temperature and rainfall. The experiment was installed in 2003 in a vineyard in Água Doce, located in the Midwest region of the state of Santa Catarina, Southern Brazil, on the cultivar Chardonnay grafted on rootstock 1103 Paulsen. The conduction system was espalier. The grapevines were submitted, in 2011/12, 2012/13 and 2013/14, to the application of 0, 20, 40, 80 and 120 kg N ha⁻¹ in form of urea. The N rates were applied at budding and flowering. Leaves were collected at flowering and veraison. The leaves were dried, prepared and total N was analyzed. At harvest the number of bunches per plant was counted and yield was evaluated. Berries were collected and crushed. Total soluble solids (TSS), titratable acidity, pH, tartaric acid and N were analyzed. Temperature and rainfall data were collected throughout the experiment. Nitrogen rates increased N content in leaves but had little effect on yield and must composition. By relating temperature and rainfall with the variables obtained in principal component analysis, separation between crops was observed with a negative correlation between rainfall and N in the must. The highest N concentrations in the must were observed in the 2011/2014 crop with less rainfall and the opposite occurred in the 2013/2014 crop.

Authors

Prof. Gustavo Brunetto, Centro de Ciências Rurais, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; brunetto.gustavo@gmail.com

Mr. Lincoln Stefanello da Silva, Centro de Ciências Rurais, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; linconfa@hotmail.com

Carlos Alberto Ceretta, Centro de Ciências Rurais, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 s-RS, Brazil; carlosceretta@gmail.com

Rafael Rosa Couto, Centro de Ciências Rurais, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; rrcouto@hotmail.com

Dr. Paulo Ademar Ferreira, Centro de Ciências Rurais, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; ferreira.aap@gmail.com

Dr. Vitor Gabriel Ambrosini, Departamento de Engenharia Agrícola, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; vgambrosini@gmail.com

Dr. Marcelo Borghezán, Departamento de Engenharia Agrícola, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; mborghezán@hotmail.com

Dr. Jucinei José Comin, Departamento de Engenharia Agrícola, Universidade Federal de Santa Maria, Caixa Postal 221, 97105-900 Santa Maria-RS, Brazil; j.comin@ufsc.br

Dr. George Wellington Melo, Empresa Brasileira de Pesquisa Agropecuária, Embrapa Uva e Vinho, Bento Gonçalves-RS, Brazil; wellington.melo@embrapa.br

Dr. Elena Baldi, Dept. Agricultural Sciences, Università di Bologna, Via Fanin 46, 40127 Bologna, Italy; elena.baldi7@unibo.it

Prof. Moreno Toselli, Dept. Agricultural Sciences, Università di Bologna, Via Fanin 46, 40127 Bologna, Italy; moreno.toselli@unibo.it