Does foliar fertilization with Seaweed improve the productivity and quality of 'Merlot' grape must?

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Developing technologies that help vines survive and produce in quantity and quality within current times is mandatory. In this sense, in the 2021/2022 agricultural harvest, the influence of the foliar application of seaweed - *Laminaria japonica* was studied, aiming at productivity and quality of the must in the 'Merlot' grape. In the city of "Santana do Livramento", "Rio Grande do Sul" (RS), Brazil; in a 15-year-old commercial vineyard of 'Merlot' clone ENTAV-INRA® 347, grafted onto 'SO4' rootstock, the following treatments were applied on 6 occasions: No treatment (control) and; Foliar application of *Laminaria japonica* seaweed (commercial product: Exal (ALAS), 2 kg ha^{-1}) The treatments consisted of 4 replications (interval) and each interval had 4 plants. The response variables evaluated at harvest time were: productivity (t ha^{-1}). Using the WineScan™ SO_2 equipment (FOSS®, Denmark) the must was evaluated: density [g $(cm^3)^{-1}$], sugars (g L^{-1}), pH, tartaric acid (g L^{-1}), malic acid (g L^{-1}), gluconic acid (g L^{-1}), ammonia content (mg L^{-1}), potassium content (mg L^{-1}), total acidity (g L^{-1} in tartaric acid). The treatment with foliar application of seaweed stood out in productivity (11.3 t ha^{-1}) when compared to the control treatment (9.8 t ha^{-1}). In the must, the potassium content showed significant differences between the treatments, with a reduced level being obtained with the foliar application of seaweed. It is preliminarily concluded that the application of foliar fertilizer based on seaweed (*Laminaria japonica*) increased the productivity of 'Merlot' vines and reduced the potassium content in the must.

Keywords: *Vitis vinifera*, sustainability, organic fertilizer, organic production, climate change.

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