

## **Effect of Borate and Potassium Fertilizer on Growth and Yield of Tomato Plant (*Lycopersicum esculentum* Mill)**

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### **ABSTRACT**

Tomato is a multipurpose of vegetables commodity and has a high economic value therefore an increase in production is needed, one of them is fertilizing. This research aimed to determine the best interaction of borate and potassium fertilizer in increase growth and yield of tomato, to determine the best dose of borate fertilizer and the best concentration of potassium to increase growth and yield of tomato. This research was carried out in experimental garden of Agriculture Universitas Pembangunan Nasional “Veteran” Yogyakarta, Ngemplak, Sleman, DIY, since January – April 2019. This research used a Completely Randomized Design (CRD) two factors. The first factor was dose of borate which were 2 kg/ha, 5 kg/ha and 8 kg/ha and second factor was concentration of potassium which were 2,5 g/l, 5 g/l, 7,5 g/l and 10 g/l. Each combination treatment was repeated three. The data were analyzed using Duncan’s Multiple Range Test at 5% level and Contrasts Orthogonal. The results showed that there is not interaction between dose of borate and concentration of potassium. The best dose of borate that affects growth in flowering time was 5 kg/ha but dose of borate 2 kg/ha affects in yield of tomato in number of fruit per plot, fruit weight per crop, fruit weight per plot. The best concentration of potassium in yield parameters in sweetness level and fruit colour was 10 g/l.

Keywords: borate, potassium, tomato