Adaptability analysis of quinoa cultivation: A case study of Zimbabwe

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Abstract

Quinoa is a kind of natural food resource with high nutritional value. The Food and Agriculture Organization of the United Nations officially recommended quinoa as the most perfect fully nutritious food for human beings. The growth of quinoa is related to local climatic conditions, soil, and so on. The particularity of quinoa determines that its growth environment is different from other food crops. In semi-arid Zimbabwe, the growth of quinoa has been restricted by the environment. Quinoa planting has been proven to be related to soil type and irrigation frequency. This paper used a fully randomized design to analyze the effects of soil types and irrigation frequency on the germination and early growth of quinoa. The best scheme without soil type and irrigation frequency was obtained by measuring the days of emergence, germination percentage, mean germination time, germination rate index, the coefficient velocity of germination, seedling height, final crop stand, and root density. This paper aims to provide a reference for further research and development of quinoa.

Keywords: quinoa, soil type, irrigation frequency, adaptability analysis, Zimbabwe