

عنوان مقاله:

Effect of Urea Fertilizer and Poultry Manure on Nitrate Reductase Activity of Potato and some Tuber Composition

محل انتشار:

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خلاصه مقاله:

Introduction: Nowadays, increasing environmental risks to human health have caused increasing attention to use chemical nitrogen sources efficiently or nitrogen supplying from organic amendments. In this respect, chicken manure seems to be a good alternative to chemical nitrogen fertilizers. The purpose of this experiment is to investigate the role of urea and poultry manure and ecological factors (climate) on the quantity of some chemical compositions of the potato tuber. Materials and Methods: To study the effects of urea and poultry manure on some potato tuber compositions, the factorial experiment was conducted in 2015-2016 during the growing season in 2 regions; Azna and Khorramabad which is located in Lorestan province in the west of Iran. The factors were 2 different sources of nitrogen supply including urea fertilizer and poultry manure. Results: Results show that the highest activity of nitrate reductase (NR) in both sites was observed using 10304 kg of poultry manure ha-1. The results also showed that the tuber nitrate content was only affected by the fertilizer source. In both studied places, the highest tuber nitrate was associated with high levels of urea fertilizer. Based on the results, the vitamin C of potato tubers grown by poultry manure were also superior to the relative vitamin C content. According to the results of this experiment, the accumulation of more than 2 times the nitrate in the tubers was obtained from urea fertilizer (244.2 versus 100 ppm). Conclusions: In order to achieve food security and an efficient and sustainable food chain, chemical fertilizers must be replaced with organic fertilizers. Thus, the belief that the use of organic fertilizers, at any level, would not cause any .problem for the health of products is definitely incorrect

کلمات کلیدی: Human Heath, Organic fertilizer, Nitrate accumulation, AtNRT 1:1 gene, Vitamin C

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