Effect of organic materials on the growth and nitrate concentration of Chinesecabbage (Brassica chinesis L.) [1]

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Summary

The effect of organic manures on the growth and nitrate concentration of Chinesecabbage (Brassica chinesis L.) was studied under the presence or absence of urea. The plant was cultivated in a 1/5,000 a Wagner pot which contained 3,000 g air-dried soil. The organic materials used were fresh sawdust, compost of sawdust and vegetable waste and compost of corncob and vegetable waste. The application rate of organic manure was 50 g kg^{-1} and that of urea was 0.77 g pot^{-1}. The results were as follows. The application of corncob compost and sawdust compost increased the pH of the soil from 4.4 to 5.7 and 5.4, respectively. About a half of nitrogen absorbed by the vegetable remained as an unassimilated nitrate form. The higher the nitrate concentration was in the soil, the higher the nitrate concentration was in the plant. However, the application of organic manure reduced the concentration of nitrate in the plant. The concentration of amide nitrogen was less than 2 mg g^{-1}. However, the higher the ammonium nitrogen was in the soil, the higher the amide nitrogen was in the plant.

(Key words: Brassica chinesis L, nitrate nitrogen, organic material, compost)

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