ONLINE ISSN : 1349-1008
PRINT ISSN : 1343-943X

Plant Production Science
Vol. 8 (2005) , No. 4 482-486

Growth, Yield and Quality of Turmeric (*Curcuma longa* L.) Cultivated on Dark-red Soil, Gray Soil and Red Soil in Okinawa, Japan

Md. Amzad Hossain[1)] and Yukio Ishimine[1)]

1) Subtropical Field Science Center, Faculty of Agriculture, University of the Ryukyus

(Received: September 21, 2004)

Abstract: We evaluated growth, yield and quality of turmeric (*Curcuma longa* L.) cultivated in pots with dark-red soil (pH 5.2), gray soil (pH 7.4) and red soil (pH 4.4) in Okinawa, Japan. The soils were collected from the 50-cm deep layer of the fields. We did not use any chemicals or organic fertilizers. Turmeric cultivated on dark-red soil had the highest plant height, root biomass and shoot biomass as compared with that cultivated on other soil types. Turmeric on dark-red soil had the highest yield with favorable color of the deep yellow and high curcumin content (0.20%). Protein content of turmeric in dark-red soil was 5.2%, which was around 40% higher than that in other soil types. Turmeric cultivated on dark-red and gray soils had a fat content 71% higher than that in red soil. The content of Ca, K and Mg was the highest when turmeric was cultivated on gray soil, and Fe was the highest when cultivated on dark-red soil. To gain a high yield and high contents of curcumin, fat, protein and Fe, we should cultivate turmeric in dark-red soil in Okinawa. We could not recognize the specific soil factor(s) required for high yielding and high quality of turmeric; however, it seems that a proper combination of soil factors, nutrients and/or pH level may be necessary to gain a high yield and high quality.

Keywords: Curcumin content, Fat content, Mineral content, Protein, Turmeric color

To cite this article:

Md. Amzad Hossain and Yukio Ishimine: “Growth, Yield and Quality of Turmeric (*Curcuma longa* L.) Cultivated on Dark-red Soil, Gray Soil and Red Soil in Okinawa, Japan”. Plant Production Science, Vol. **8**, pp.482-486 (2005) .

doi:10.1626/pps.8.482

JOI JST.JSTAGE/pps/8.482