China: Balanced Fertilization for Sustained Yield and Quality of Tea

A survey of Chinese tea gardens revealed over half the sampled areas to be deficient in potassium (K). Deficiencies were concentrated in the southern provinces of Guangdong, Guangxi and Yunnan, which had an average available K content of 80 mg/kg. The northern regions appeared well managed, but only 16 percent of samples from Jiangsu, Anhui and Hubei had plant-available K levels greater than 150 mg/kg. The survey identified a close relationship between K deficiency and low magnesium (Mg) availability. Unbalanced fertilizer programs based on urea and other ammonium-nitrogen (NH_4-N) fertilizers promoted Mg uptake by tea and aggravated leaching losses due to increased soil acidity.

A 4-year field trial in southern China examined the effect of K and Mg fertilization on black, oolong and green tea yield and quality. The combination of K and Mg created greater nutrient use efficiency and increased yields by 17 to 28 percent for green tea, 9 to 38 percent for oolong tea, and 10 to 18 percent for black tea. Leaf quality characters such as free amino acids, polyphenols and caffeine were significantly improved by combining K and Mg. Reseachers recommend a post-harvest application during plant dormancy as the optimum time to adopt this balanced approach. **BCI**

Source: Hardter, R. 1997. ASIAFAB, 17: 31-33.

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response can still be expected with the application of 80 kg/ha of N. Annual banded applications of P_2O_5 and K_2O at 50 kg/ha each year would be preferable to a combined biannual application of 100 kg/ha at planting. This practice produced significant yield response at all sites and produced a highly significant response at Madre Tierra. Management of P fertiliser in Andisols utilizing split applications every year may become a very important tool to maximize sugar cane yields in Guatemala and other regions of Central America. **BCI**

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