Functional Components in Citrus: Alteration by Mineral Elements. (S04-pa143420-Oral)

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Abstract:

Epidemiological, case control, and cohort studies suggest that citrus functional components can protect from several types of cancer and heart diseases. Recently, we have demonstrated that significant inhibition of 'MCF-7' breast cancer cells using citrus limonoids (Nutrition and Cancer 2001,40:180-184). Field experiments conducted to determine the effect on nitrogen (N) and potassium (K) on citrus functional compounds like naringin, narirutin, and vitamin C content of commercially important 'Ruby Red' grapefruits. Interestingly, significant decrease in functional components was observed in grapefruits with increased levels of N and K application. In another experiment, K applied to 'Ray Ruby' grapefruit through foliar spray during May-June yielded significantly higher lycopene concentrations, number of marketable size (48 and larger) fruit per tree and fruit number per tree. These results have indicated that fertilizer rates and method of application have an influence on the levels of citrus functional components. Further research efforts are needed for fine-tuning the pre-harvest production methods to improve the nutritional value of the citrus fruits.

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