



Tropentag, September 14-16, 2010, Zurich

“World Food System —  
A Contribution from Europe”

## Influence of Mineral and Organic Fertilisers as Source of Nitrogen on the Yield and Mineral Content in Roots of Carrots (*Daucus carota* L.) from Myanmar and Germany

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### Abstract

Use of organic and mineral fertiliser can influence the yield and mineral composition of the harvested crop. In Myanmar, local carrot cultivars are normally grown with organic fertilisers as they are readily available and cheaper than mineral fertilisers. However, higher amounts of mineral nutrients supplied by mineral fertilisers are necessary when the farmer wants to introduce hybrids cultivars. The effect of using mineral fertilisers alone and the combination of organic and mineral fertilisers might vary the nutritional composition of the crop. The present study aim to investigate the yield and mineral composition of local and hybrid carrots supplied by mineral fertiliser alone and combined application of organic and mineral fertilisers.

The pot experiment was performed in winter season 2007 in the green house. A split-plot experimental design was applied with three replications. Both mineral and organic fertilisers were used as a source of nitrogen fertilisers with  $N = 120 \text{ kg ha}^{-1}$ ,  $P_2O_5 = 140 \text{ kg ha}^{-1}$  and  $K_2O = 220 \text{ kg ha}^{-1}$ . In the main plot, three kinds of fertilisers were set: mineral fertiliser (MF), MF + farmyard manure (MF+FYM), and MF + Compost (MF+CM). A common carrot cultivar (cv.) from Myanmar (Srup) and a hybrid cv. from Germany (Flyaway) were used as sub plot factor.

Yield and mineral composition of the carrot cvs. were unaffected by all fertiliser types. However, higher yield potential was observed from combined application of mineral and organic fertilisers. Root N content increased after MF application compared to combined fertiliser application. However, N content in cv. Flyaway applied by MF was the highest. Comparing the cultivars, independent on the fertiliser treatments, the local cv. Srup contained fewer minerals than the hybrid cv. Flyawy. The present data suggest that combined usage of mineral and organic fertilisers could be more efficient than chemical fertiliser alone. Interestingly, hybrid carrot was relatively superior to local carrot in mineral nutrients uptake and for higher yield potential.

**Keywords:** chemical fertiliser, combined application, hybrid cultivars, local carrot cultivars, organic fertilisers