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ARE HARVEST AND SENSORY QUALITY OF LETTUCE AND ONION INFLUENCED BY GROWING CONDITIONS IN A CONVENTIONAL AND THREE ORGANIC CROPPING SYSTEMS?**H.L. Kristensen^{1*}, U. Kildmose², D.B. Dresbøll¹ and K. Thorup-Kristensen³**¹ Department of Horticulture, Aarhus University, Aarslev, Denmark² Department of Food Science, Aarhus University, Aarslev, Denmark³ Department of Agriculture and Ecology, University of Copenhagen, Høje Tåstrup, Denmark

* Email: Hanne.Kristensen@agrsci.dk; Tel: +4589993233

Differences in nutrient availability and methods of pest management may affect crop growth and product quality. The question is whether conventional and organic cropping systems, which differ clearly in strategies for nutrient and pest management, influence the harvest and sensory quality of the products? With the aim to elucidate this question, lettuce and onion were grown in a conventional and three organic cropping systems with increasing levels of nutrient recycling and use of intercrops for natural pest management in the period of 2007-2009. The conventional and first organic system relied fully on external inputs in the form of NPK or liquid manure for nutrient management, respectively. In the second organic system, low external inputs of liquid manure were combined with the use of catch crops and legumes for recycling of nutrients within the agro-ecosystem and input of N from fixation. In the third organic system, intercrops were used for natural pest management in addition to catch crops and legumes for nutrient management. The harvest yield and quality were registered for both crops, and sensory analysis was performed as quantitative descriptive analysis by a trained sensory panel of 10 panelists for lettuce. The sensory panel developed a vocabulary which includes bitterness, sweetness, lettuce- and pea flavour. Total yields per meter crop row were comparable in the three organic systems and amounted 72% and 76% of those in the conventional system for onion and lettuce, respectively. A total of 10-19% of onion and 8-10% of lettuce yields were discarded due to defects and did not differ between cropping systems in average over the three years of experiment. In addition, there was no influence of cropping system on the reasons why products were discarded. In individual years, harvest quality defects differed between cropping systems for onion, however, not allowing overall conclusions on best performing system. Likewise the sensory analysis showed only minor differences between lettuce grown in the conventional or the organic cropping systems for selected sensory attributes like bitterness. There was also an interaction between the effect of the growing system and growing years. We conclude that harvest and sensory quality were not affected by the clear differences in nutrient and pest management between the four cropping systems.

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