Session D-2

SENSORY QUALITY AND HEALTH-RELATED SUBSTANCES OF BROCCOLI GROWN AT DIFFERENT LATITUDES

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A semi-field experiment was conducted 2009 to 2011 to investigate possible differences in effects of primarily ambient temperature and solar radiation on broccoli (Brassica oleracea var. italicva cv. Lord) grown at four northern latitudes: Spain (Galicia, 43°), Germany (Brandenburg, 52°) and Norway (Grimstad, 58°; Tromsø, 69°). All other growing conditions were kept identical at the locations, i.e. soil, seeds, fertilization, precipitation shelter, insect netting, and use of specially designed pots with water supply according to the plant’s need. Florets prepared from broccoli heads of commercial maturity were randomized and used for analysis of intensity of sensory attributes and contents of glucosinolates, flavonol aglycons and vitamin C.

The development of broccoli heads was normal during three summer seasons with the exception of Spain for two summer seasons, probably due to too high temperature. Therefore, the experiment was repeated two autumn seasons in Spain and those samples were used for sensory analysis. Most of the sensory attributes measured were significantly different between the locations. Preliminary results for flavonol contents and profile also indicate large differences between the locations. (All authors have contributed with large and important parts of the work.)