Glycoalkaloids in potatoes: Content of glycoalkaloids in potatoes for consumption

Potatoes contain glycoalkaloids in varying levels depending upon variety, treatment and so on. Glycoalkaloids are potentially toxic at the natural levels in potatoes, and Nordic assessments recommend that the safety levels of total glycoalkaloids (TGA) in new potato varieties should not exceed 100 mg/kg. Thus the aim of this study was to make a survey of the distribution and contents of TGA in potatoes on the Danish market, including many different and relevant varieties during a 6-year period. A total of 386 samples of potato tubers were analysed for α-solanine and α-chaconine by extraction with acetic acid and determination by RP-HPLC with UV-detection at 202 nm. The results not only confirmed that contents above 100 mg TGA/kg in potato tubers frequently occurred in some years, but also showed the possibility of finding lower contents in the same varieties other years. This led to the cautious conclusion that by careful selection of varieties and environmental conditions, generally providing consumers with potatoes containing less than 100 mg TGA/kg would be possible.