Quality assessment of mushroom *(Agricus bisporus)* composts during production using Near Infrared spectroscopy

HSS Sharma*, M Kilpatrick, G Lyons, J Murray and R Mellon

Department of Applied Plant Science and Department of Biology and Biochemistry, Queen's University, and Applied Plant Science Division, Department of Agriculture and Rural Development for Northern Ireland, Newforge lane, Belfast BT9 5PX, UK

E-mail : s.sharma@qub.ac.uk

Cultural conditions during production of compost, using wheat straw and chicken litter as raw materials, will affect the microbial and biochemical characteristics, leading to a wide variation in mushroom productivity. Over the past 10 years, chemical and instrumental methods, suitable for assessing compost quality have been studied in Northern Ireland. In addition, the use of near subject of investigation over the past 4 years. Previous studies have shown that NIRS can be used for assessing quality of dried and milled composts. The aim of the current investigation is to develop NIR calibrations for key quality parameters such as dry matter, pH, nitrogen, carbon, ash, microbial population and fibre factions during the two stages of production using spectra of fresh composts. Near infrared reflectance measurements of fresh composts prepared by 6 producers were made during a two-year period. Although the spectra of fresh composts were dominated by two moisture peaks at 1450 nm and 1940 nm, good calibrations for determining moisture content, conductivity, pH, nitrogen, carbon and fibre fractions were developed. The results of quality assessment during commercial production using the calibrations will be presented and discussed.