

P010 The Identification of Proteins from Dough Liquor

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Proteins of dough liquor isolated by ultracentrifugation of wheat (cv. Hereward) doughs have been separated by 2D electrophoresis, using isoelectric focusing from pH 3-10 or pH 6-11 and SDS-PAGE. Dough liquors proved to be an excellent source of concentrated water soluble proteins from which almost all gliadins and glutenins had been removed. The dough liquors were initially made using only flour and water and subsequently with the addition of salt or salt and ascorbate. The pattern of proteins was broadly similar but significant differences were observed on adding salt. 96 peaks were picked after separation with isoelectric focusing from pH 3-10 and 60 peaks from a pH 6-11 separation from the flour and water dough. Dough liquor from defatted flour, water, salt and ascorbate was foamed and the foam separated. 96 peaks were picked after 2D electrophoresis to reveal the surface active proteins. All 252 samples were analysed by MALDI-tof mass spectrometry and 14 by Qtof mass spectrometry using wheat protein sequences, other plant sequences or wheat EST sequences. 166 of the samples were identified, some as a mixture of two proteins. The identified proteins were mostly enzymes or enzyme inhibitors and often corresponded to proteins previously identified as allergens in baker's asthma.