

Impact of Air-Dry Flowrate on Moisture Content and Chemical Constituents of Spray Dried Fish Oil

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Abstract

Fish oil contains high docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) and is considered as a good source of polyunsaturated fatty acids (PUFAs). Regular intake of fish oil in the daily diet may provide several health benefits, including the prevention of diabetes, inflammation and arthritis. In this study, commercial Menhaden fish oil was microencapsulated using a spray drying approach with air-dry flowrates of 3.14, 4.19 and 5.24 m/s. The spray dried fish oil powder was characterised to determine moisture content and chemical composition using moisture content analyser and gas-chromatography mass spectrometry (GCMS), respectively. The moisture content of the spray dried powder was significantly affected by the changes of the air-dry flowrate but the chemical compositions remain the same. The lowest moisture content of 3.33% and the presence of Hexadecenoic acid and Pentadactyl acid (C15:0) was recorded at air-dry flowrate of 4.19 m/s.

Keywords: Fish oil; Spray drying; Microencapsulation, Air-dry flowrate.