

High-Moisture Meat Analogues from Rapeseed and Pea Protein Blends

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Rapeseed protein is not currently utilized for food applications, although it has excellent physicochemical, functional, and nutritional properties similar to soy protein. Thus, the goal of this study was to create new plant-based meat analogues from a 50:50 blend of rapeseed protein concentrate (RPC) and yellow pea isolate (YPI) using high-moisture-extrusion (HME) cooking with a twin-screw extruder to gain a better understanding of the properties of the protein powders and resulting meat analogues. The effects of extrusion processing parameters such as moisture content (60%, 63%, 65%, 70%), screw speed (500, 700, and 900 rpm), and a barrel temperature profile of 40–80–130–150 °C on the meat analogues' characteristics were studied. When compared to the effect of varying screw speeds, targeted moisture content had a larger impact on textural characteristics. The extrudates had a greater hardness at the same moisture content when the screw speed was reduced. The specific mechanical energy (SME) increased as the screw speed increased, while increased moisture content resulted in a small reduction in SME. The lightness (L^*) of most samples was found to increase as the target moisture content increased from 60% to 70%. The RPC:YPI blend was equivalent to proteins produced from other sources and comparable to the FAO/WHO standard requirements.