

EVALUATION OF PHYSICOCHEMICAL PROPERTIES OF DIFFERENT SORGHUM (*Sorghum bicolor* L. Moench) EXTRUDATES

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Sorghum is usually used for animal feeding, but its use directly into food products has been limited mainly due to its high tannin and insoluble fiber contents. However, diets of high fiber content and natural pigments have been recently considered as healthy acting as bioactive compounds. Whole sorghum flours from six cultivars (*Sorghum bicolor* L. Moench) (CMSXS180, 9010032, BRS310, BRS308, BRS305 and 9929034) were processed in a twin-screw extruder fitted with a circular die, running at constant parameters of: solid feed (9 kg/h), water flow rate to achieve 14% moisture (w.b.), barrel temperatures (30, 30, 60, 90, 100, 100, 120, 120, 150, 150°C) and screw speed (600 rpm). The analysis performed to compare the different cultivars, were expansion index and paste viscosity. The values of radial expansion were 7.61, 6.64, 7.89, 7.09, 4.47 and 4.12, and the results of cold paste viscosity (25°C) were 121.5, 309.5, 208.0, 298.5, 179.5 and 260.5 cP for CMSXS180, 9010032, BRS310, BRS308, BRS305 and 9929034, respectively. BRS310 and CMSXS180 showed the highest radial expansion, whereas 9929034 and BRS305 showed the lowest value. Results showed that cultivars with low expansion also presented tannin in their composition which is usually associated with the brown color of the cultivar. The cold paste viscosity values were very low when compared to the literature data, which may indicate either high shear or low starch content in the extruded flours. All flours were shown to be potential materials for application that requires certain degree of solubility.