

F-03

Processing of soybean with extrusion technology for food and feed application

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Currently, the majority of soybeans processed using solvent extraction process, which very effectively extracts most of the oil from soybeans. The most common solvent used in this process (hexane) is declared a hazardous air pollutant by the EPA and a volatile organic compound which can contribute to the ozone depletion. For a small or medium size oilseed processing facility building a new solvent extraction facility requires major capital investment as well as technical skill to operate the extraction facility and knowledge to full fill the environmental regulation. On the other hand, extrusion processing of soybeans is getting very popular because it requires low investment and this process is environmentally friendly. In this process soybeans are processed using extruders to rupture the oil cell. After this, oil is removed using expeller or press. The resultant soybean cake contains 7-8% residual oil and excellent nutritional quality.

Currently this method is being used to obtain food grade soybean flour, which can be used in baking and other food applications as well as soy milk. If the soybeans are feed grade we can obtain mechanically expelled soybean meal which can be used for the feed application. The meal and soy flour obtained from this process has shown remarkably excellent functional properties. In this presentation details about this process will be discussed.