CHOPIN Technologies apparatus to master wheat and flour quality

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For more than 70 years, Chopin's range of products has been dedicated to quality control analysis for grains, flours, foods and feeds. Its international experience allows Chopin to propose, complete and adapt solutions for all flour producers and users, whatever the final product may be. Chopin has the right answer for controlling most of the processes in the first and second transformation of cereals and cereal products. For example, as bakers know, it depends on the protein quality, whether flour will meet their requirements or not. This is the reason why tests like the Consistograph and Alveograph exist. These tests allow measurement of water absorption, tenacity, elasticity, extensibility and baking strength of the tested flour. It is necessary for all users wishing to control or blend flours to measure the effects of additives or write a specification book. Taking another example, mechanical starch damage, caused by the milling process, has a positive effect by notably increasing the water absorption capacity of flour, leading to a better dough yield. But if damage is excessive, the dough becomes sticky; proofing is too strong and crust colour too dark. The Chopin SDmatic offers the ultimate solution to measure starch damage in a very fast, simple and accurate way. Assessment of the complete dough process through temperature increase and decrease with gelatinization and retrogradation of starch is very useful with the Mixolab. The Infraneo is the latest NIR analyzer from Chopin Technologies. Highly versatile (whole grains and flours), it adapts to every application for grain facilities, milling industries and second transformation. The major product parameters: protein, moisture, ash, gluten, oil, ash, and water absorption are determined in a few seconds.

Our team is comprised of highly skilled technicians relayed by a network of more than 60 distributors world-wide especially selected for their commitment to the wheat-flour-bread market. The Chopin website provides a real link between the industry and our technicians. Everyone involved in the processing of cereals is welcome, whatever their need for quality control. The list of these partnerships is long and demonstrates CHOPIN's openness of mind: AACCI, AFNOR, ANMAC, ARVALIS, BIPEA, CEN, ENSMIC, INRA, IRTAC, ICC, ISO, ONIC etc. The CHOPIN Applications Laboratory also provides specific services such as training, studies, etc. More information can be found at www.chopin.fr

Products and processes related to the use of ICRISAT mandate cereals in the food industry

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Dehulling of sorghum and pearl millet grains was found to reduce the hardness and resulted in crunchier extrudates in case of both sorghum and pearl millet. Composite flours were prepared using whole sorghum and whole pearl millet as well as dehulled sorghum and dehulled pearl millet along with the other crops of the semi-arid tropics, namely; chick pea, pigeon pea and groundnut. Other than control (100% whole/dehulled sorghum flour and 100% whole/dehulled pearl millet flour), the composite flours had chickpea flour (30%), pigeon pea flour (30%) or a blend (30%) of equal combination of chick pea-groundnut flour or pigeon pea-groundnut flour. Nutritional properties of the composite flour blends were analyzed and extrusion cooking was carried out using a twin screw extruder (temperature: 115 °C and 90 °C for two different heating zones, die diameter: 3 mm and screw speed: 400 rpm). Texture analysis of the extrudates was carried out and data compared across formulations to find the most acceptable product. Sensory analysis results indicate that in case of sorghum blends, extrudates prepared from the composition of dehulled sorghum, chick pea and ground nut (70:15:15) was most acceptable organoleptically. This correlates well with its high expansion ratio (2.80 ± 0.11) and low bulk density (0.16 ± 0.01 g ml^{-1}) as well as with the texture analysis data (peak force = 18.12 N and Slope = 0.09 N mm^{-1}). In case of pearl millet blends, extrudates prepared from dehulled pearl millet and pigeon pea (70:30) was found to be most acceptable by the sensory panel. The sensory data is further supported by the low values obtained for peak force (16.81 N) and slope (0.01 N mm^{-1}). The expansion ratio was 2.81 ± 0.09 and the bulk density 0.22 ± 0.01 g mL^{-1}. The nutritional profiles of the blends were also superior when compared to that of the control. A number of healthy snacks have been developed based on this study and are ready for commercialisation. In addition, the work also focussed on other opportunities to exploit the nutritional and functional properties of dryland cereals in the food processing industry for developing various value-added food products.