Studying the Relationship Between Phytic Acid Content and α-Amylase Activity in Different Wheats Flour and Acrylamid Content in Breads Made of Them

Phytic acid is found in cereals in high concentrations and due to its inverse effect on access to minerals, is often known as a natural anti-nutritive factor. There are also researches which shows it’s inhibiting effect on α-amylase activity. In recent decade, the major problem in the top of food health issues is an wanted production of acrylamid due to reaction between amin group of amino acids like Asparagine and carbonyl group of reducing sugers like glucose, fructose. Which exists in most starchy foods made from plants that have been affected by the thermal process for example Sangak bread which is one of the traditional breads in Iran and has high nutritional properties, appears to have potential for formation of acrylamid. Materials and methods In this research some traits were measured including moistured, α amylase activity (falling number) and acid phytic content in different varieties of Iranian wheat and acrylamid content in different varieties. In this regard, α amylase activity in wheat flour samples was measured by falling number device and acid phytic content in wheat flour samples was measured by high performance liquid chromatography with refraction indicator (HPLC/RI). Acrylaid content of breads made of this wheat was measured using gas chromatography with electron capture detector (GC/ECD). The data were entered in SPSS software and were analysed. Result and discussion The relationship between variables: falling number, phytic acid and acrylamid was determined if varieties of Iranian wheat using pearson correlation coefficient. The relationship between variables: falling number and acrylamid content and also the relationship between falling number and also the relationship between variables: phytic acid and conventional Iranian wheat using pearson correlation coefficient was too low (p-value > 0.05). This rate is not statistically significant. Furthermore, by increasing moisture, falling number rate has been enhanced and phytic acid content has decreased finally. Variety Toos was recognized as the best variety due to the minimum acrylamid content and its appropriate chemical traits for baking Sangak bread.
کلمات کلیدی:
wheat, Sangak bread, α- amylase activity (falling number), HPLC ، RI. GC ، ECD.

لینک نتایج نشریه در بایگان سیویلیکا:
https://www.civilica.com/Paper-NIAC01-NIAC01_162.html

این صفحه به مدتای تاییده نمایه سازی مقاله در بایگان استنادی سیویلیکا می‌باشد. در هر لحظه به منظور تایید اصلاحات این گواهی می‌توانید وضعیت نتایج مقاله را از طریق لینک فوق به صورت آنلاین کنترل نمایید.