

Evaluation of Two Method to Measure Xylanase Activity in Relation with Rheological Effects of Xylanases on White Flour

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SUMMARY

Many methods are available to measure the xylanase activity of enzymatic preparation. Most of method uses different substrates from those that will be hydrolyzed in various applications in food industry. This fact will lead to a deformed image about how evaluated xylanases will really act in a specific application. The aim of this study is to evaluate the activity of seven xylanase preparation with two method, a colorimetric method with birch insoluble xylan as substrate and a viscometric method with wheat soluble arabinoxylan as substrate. All xylanase was added to dough in two dosage each, a unique dose and a dose equivalent to average dosage recommended by producer. The rheological effects of xylanase addition were determined extensographic. At the same level of xylanase addition, expressed in BXU (Birch Xylan Unit) with colorimetric assay, the rheological effects were different between xylanase evaluated. This suggests that the method used to evaluate the xylanase activity it is not appropriate if xylanase will be used in breadmaking. Also, no correlations were observed when the xylanase were added in average recommended dosage. When the xylanase activities were expressed by viscometric assay and the substrate was wheat arabinoxylan a weak correlation between xylanase activity in dough and rheological effects appear, only if average recommended dosage were used. The unique dosage for some xylanase were out of recommended usage. The xylanase activities from dough were weak correlated with dough extensibility, the R^2 at 45, 90 and 135 minutes were 0.5607, 0.5348 and respectively 0.4150. The correlations with all others extensographic parameters were considerably lower. The viscometric assay was superior to colorimetric assay, probably due the wheat arabinoxylan used as substrate

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