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作物学报 2009, 35(9) 1738-1743 DOI: 10.3724/SP.J.1006.2009.01738 ISSN: 0496-3490
CN: 11-1809/S

论文

Mixolab参数与粉质、拉伸参数及面包烘烤品质的关系

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摘要：

根据仪器测定的面粉品质特性预测面包烘烤品质是进行小麦品质改良的重要方法。法国肖邦公司(Chopin Technologies, France)最新推出的Mixolab分析仪可以同时测定面粉加水后恒温揉混及面团升温后蛋白质弱化和淀粉糊化特性，明确其与现有相似仪器如粉质仪和拉伸仪等的关系对小麦品质测试具有重要意义。利用 Mixolab分析仪、粉质仪、拉伸仪测定了41份高代育种品系的有关参数和面包烘烤品质，并分析了Mixolab与粉质仪和拉伸仪相关参数的关系及预测面包品质的可靠性。结果表明，可以用Mixolab的形成时间、稳定时间、面团受热后蛋白质弱化值(C2值)和到达淀粉糊化反弹值的时间(C4时间)来预测粉质仪和拉伸仪的品质参数，可解释其变异的74%~90%；可以直接用C2值预测面包体积、外观、结构和总分，决定系数分别为52%、73%、70%和68%；预测面包质地和弹性的参数不仅包含Mixolab稳定时间和C2值，还有表示淀粉糊化特性的C3时间、C4和C5值及C5温度。用Mixolab分析仪既可以了解蛋白质特性和面包烘烤品质的关系，又明确了淀粉品质对面包品质的显著影响，在品质测试中有其独特之处。Mixolab、粉质仪和拉伸仪各参数对预测小麦面包体积、内部质地结构等烘烤品质性状的贡献不同。

关键词： Mixolab分析仪 粉质议 拉伸仪 普通小麦 面部烘烤品质

Relationships of Mixolab Parameters with Farinograph，Extensograph Parameters，and Bread-Making Quality

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Abstract:

Bread-making quality based on dough properties is routinely measured with various equipments to predict quality of wheat cultivar. It is critical to clarify the association between the newly available Mixolab parameters and dough characteristics determined by Farinograph, Extensograph, and bread-making quality. Forty-one breeding lines were used to measure parameters of Mixolab, Farinograph, Extensograph and bread-making quality, and to determine the associations between parameters of Mixolab and Farinograph and Extensograph and the reliability of predicting bread-making quality using these parameters. These results indicated that parameters of Farinograph and Extensograph could be predicted by Mixolab C1 (development time), stability, C2 (protein weakening during heating) and time C4 (time to come setback of starch pasting), accounting for 74–90% of the variation. Mixolab C2 could be used in prediction of loaf volume, bread appearance, structure, and total score, accounting for 52%, 73%, 70%, and 68% of variation, respectively. For bread texture and elasiticity, the Mixolab stability, C2, parameters of starch pasting properties, such as time C3, C4, C5, and T° C5, were more important parameters. The effects of protein property and starch quality on bread baking quality were explained well with Mixolab parameters, thus, Mixolab was particularly applicable to determine wheat quality property. Because of the different contributions to the evaluations of bread volume, texture, and structure, Mixolab, Farinograph, and Extensograph are suggested to be used according to experimental purposes.

Keywords: Mixolab Farinograph Extensograph Commn wheat Bread-making quality

收稿日期 2009-02-19 修回日期 2009-04-28 网络版发布日期 2009-07-04

DOI: 10.3724/SP.J.1006.2009.01738

基金项目:

本研究由引进国际先进农业科学技术计划（948计划）重大国际合作项目（2006-G2）和国家重点基础研究发展计划（973计划）项目（2009CB118300）资助。

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