

Baking quality of spring wheat variety mixtures

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Introduction

Experiences in the past with inferior baking quality is one of the reasons for farmers for not mixing varieties. The challenge for this research is to find mixtures, which combine good yield with good baking quality.

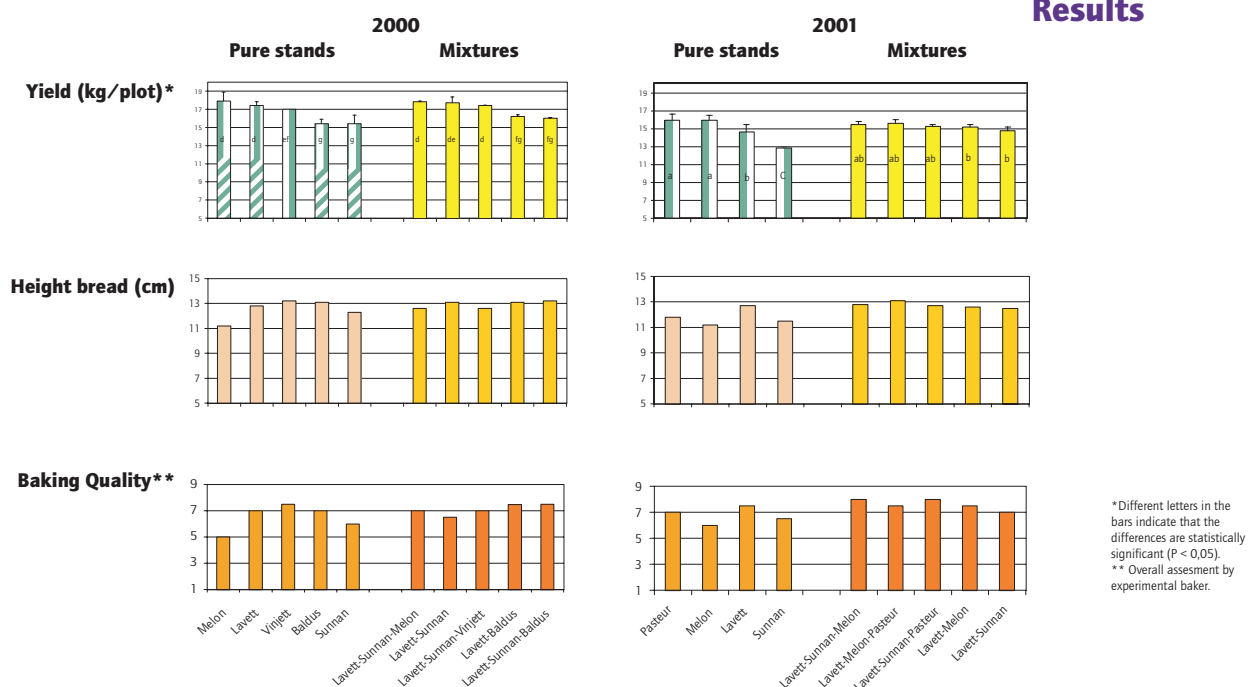
Research questions were:

- How does the yield of mixtures compare to the pure stand of the highest yielding variety?
- How does the baking quality of mixtures compare to the best baking variety?
- Is it possible to combine high yield with good baking quality in mixtures?

Materials and Methods

Pure stands of spring wheat varieties with good baking properties and different mixtures of these varieties were sown in the commercial wheat field of an organic farmer. The farm is situated on a nutrient rich young clay soil and managed bio-dynamically since 1984. We used a randomised block design with two replications in 2000 and three replications in 2001. The test baker of a bio-dynamic wheat merchant carried out the baking tests.

Results



The results in the figure show that:

- Yield of three of the five mixtures was high in both years. Yield of these varieties was not statistically different from the highest yielding variety (Melon and Pasteur in 2001; Melon in 2000)
- Baking quality of all mixtures was good. In 2001 four mixtures and in 2000 two mixtures were at least as good as the best pure stand (Lavett in 2001 and Vinjett in 2000). In both years all mixtures produced better bread than the highest yielding varieties Melon and Pasteur.
- Remarkably, in 2001, the baking quality of the mixtures Lavett-Sunnan-Melon and Lavett-Sunnan-Pasteur was superior to the quality of the individual components. In 2000 this was true for Lavett-Sunnan-Baldus and Lavett-Baldus.
- In both years the mixture Lavett-Sunnan-Melon combined good yield (not statistically different from the highest yielding varieties) with good baking quality. In 2001 two other mixtures of three components showed similar promising results.

Conclusions

In the past Dutch organic farmers experienced that the baking quality of mixtures was inferior. Yet, the two years of our research show the opposite: with the spring wheat varieties, which are currently available in The Netherlands, it is possible to assemble mixtures which combine good yield with good baking quality. We hope, that the results of the experiment of 2002 will confirm these findings. This would open the way for farmers to reconsider growing mixtures and, in this way, enhance the level of genetic diversity in their fields.

