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How to implement organoleptic quality assessment in a participatory plant breeding approach

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WP and Task objectives :
WP7 : quality

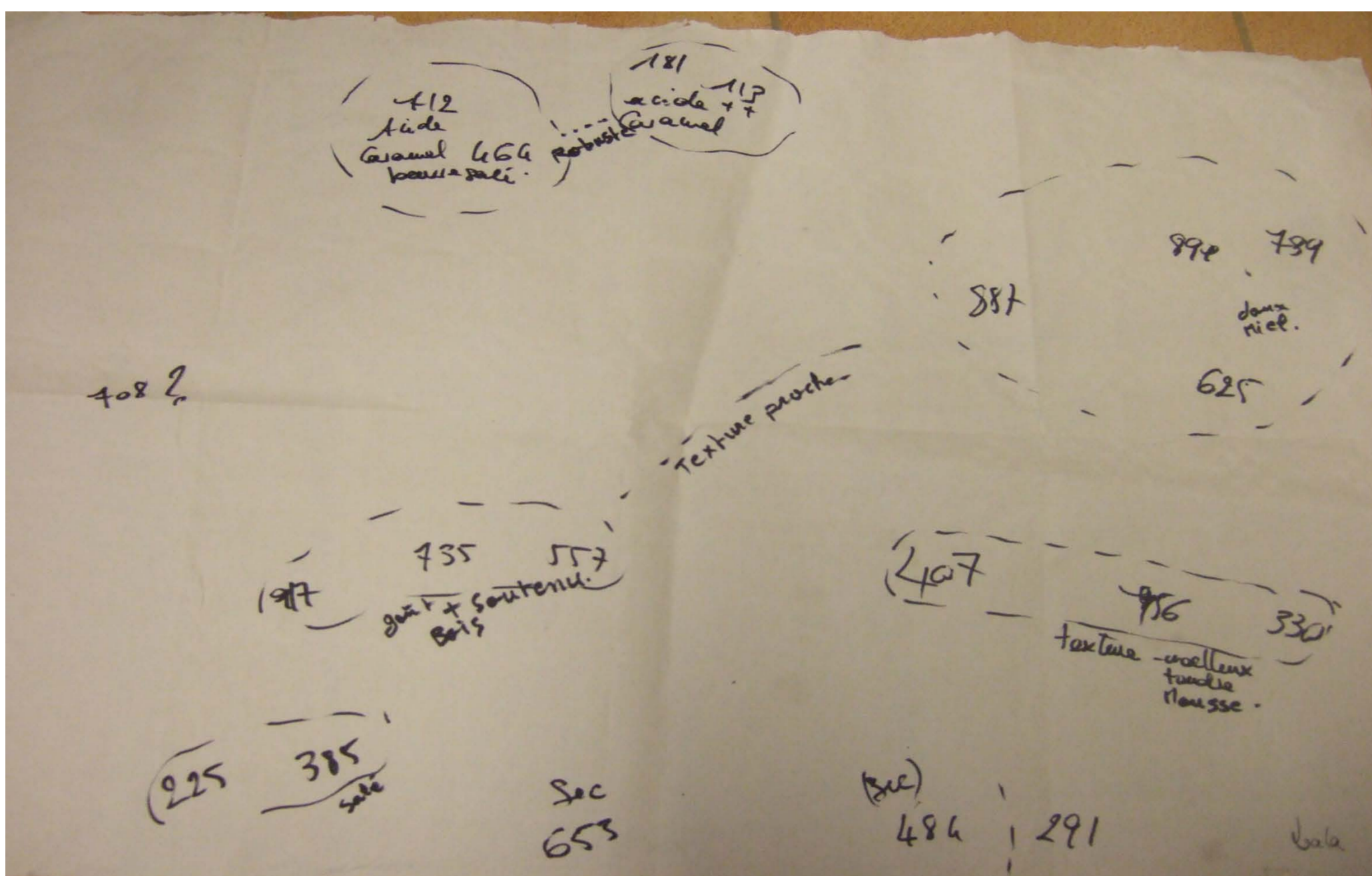


Figure 1 : Individual Napping®.

Figure 1 shows the bread's perception of a panellist. We can see here, word near the product which eased the axis interpretation.

Methodology

Three varietal structures (a modern variety Renan, a population, Sixt-sur-Aff and a dynamic population) and four geographic areas are tested;

Moreover, to take into account the transformation process, five bakers (five baking processes) are tested. In order to understand the relative role of the three factors (genotype, environment, baking process), a unique milling technique have been applied and one of the three factors have been fixed at each experiment. In the following results, the variety has been fixed. A final experiment will test the genotype*environment interaction and fixed the baking process. A panel of 12 baking-farmers, researchers and few consumers have analyzed twenty bread products from four flour samples (the four geographic areas) and transformed by five bakers.

First results

The results analyses used a Multiple Factorial analyses and the INDSCAL model, which let taking into account the importance according to a dimension by each panellist. It offers a representation of the common perception.

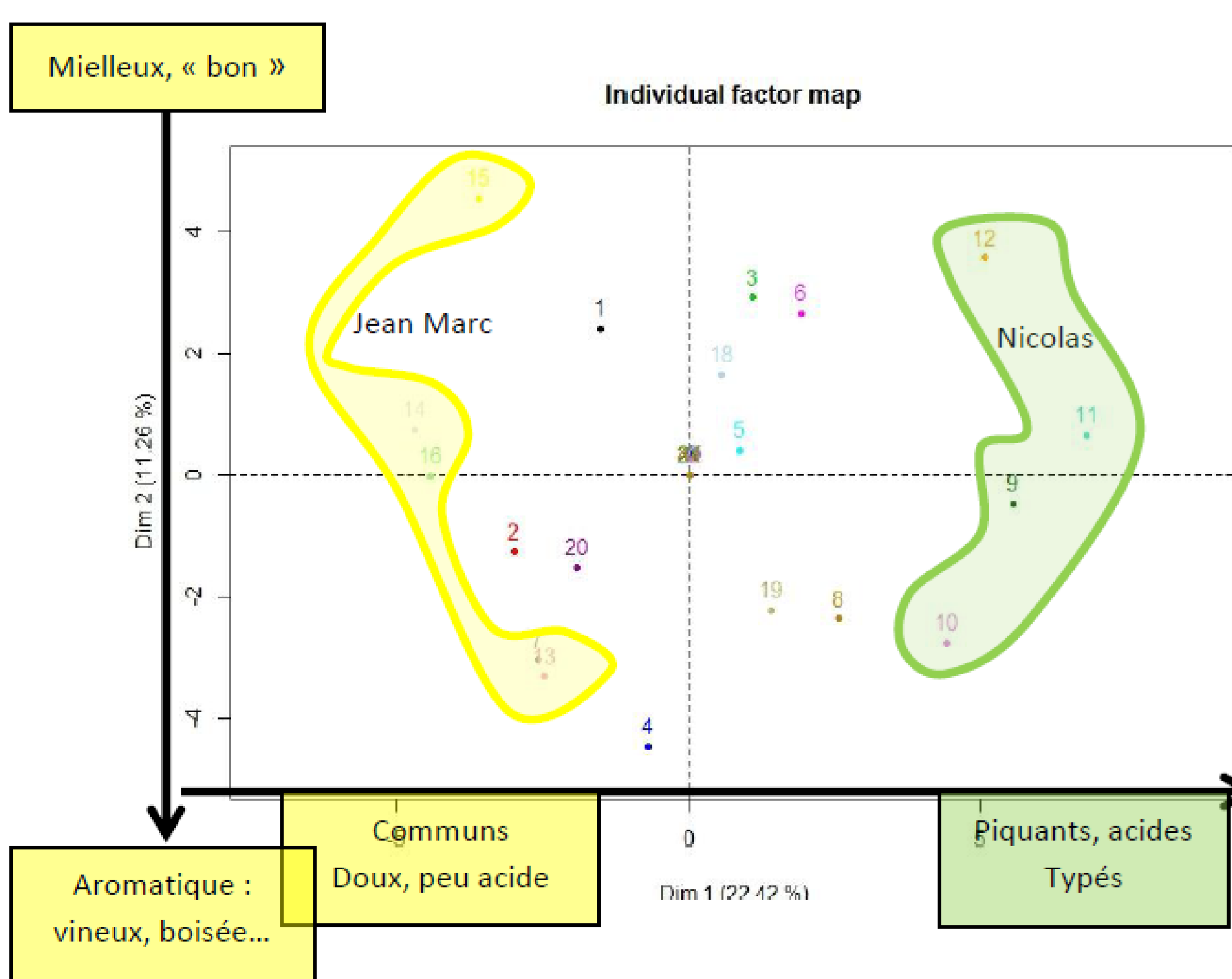


Figure 2 : Common representation of bread, Sixt sur Aff

The variety test on the left is the Sixt population. We can see that the main factor affected the perceived quality of bread is the bakers. On the contrary, the right representation highlight the importance of the environmental factor for the dynamic population.

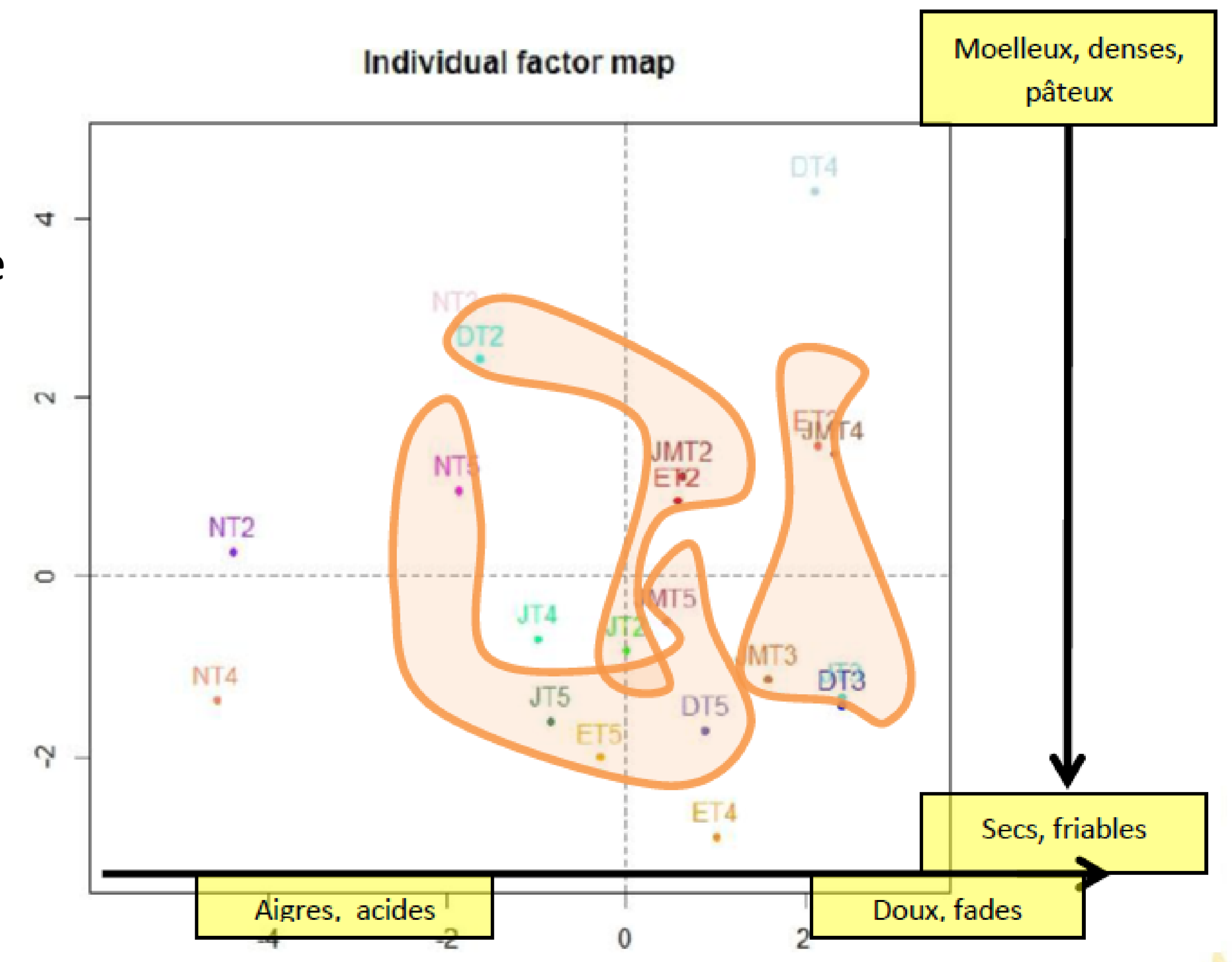


Figure 3 : Common representation of bread, dynamic population

In this case, groups are formed according to their provenance more than according to the baker. The next step is to put forward hypothesis in on the agronomical and technological behavior of populations and test it.