

FOCUS // BREEDING

BREEDING

- Consists in crossing yeast strains that have oenological characteristics of interest.
- The resulting strain combines the performances of 2 or more different strains.

QTL MARKERS

Many research projects combining genomics and physiology have revealed genetic characteristics linked to physiological traits of oenological interest, named QTL (POF character, VA and SO₂ production, aroma production...). Therefore it is possible to search for yeast strains with specific genotypes of interest to use for breeding: **selection guided by markers**.

DID YOU KNOW IT?

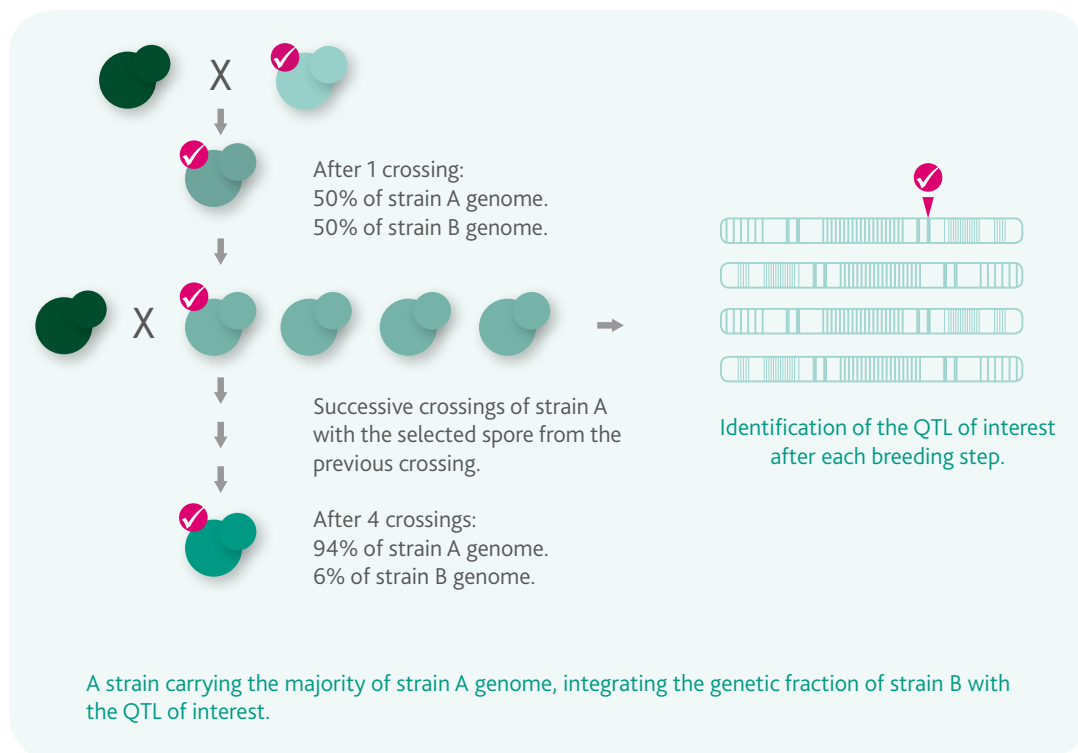
The choice of parental strains can be based on physiological criteria (fermentation performance, low VA and SO₂ production, release of aromas...) but also on genetic ones. In fact, a certain number of genetic characteristics (what we call QTL - Quantitative Trait Loci) are linked to physiological traits (phenotypes).

QTL USAGE

Allows to go beyond the analytical data based solely on fermentation phenotypes, therefore multiplying the possibilities for selecting parental spores. It also permits to better focus on areas of improvement in the selection process.

QTL MARKERS GUIDED BREEDING

When a given strain (strain A) needs to be improved on a particular characteristic present in a different strain (strain B), it is possible to perform **genetic marker driven backcrossings**. Once strain A is bred with strain B, the descendent strain carrying the QTL of interest is identified, then crossed again with strain A. This step is repeated until obtaining a descendent **strain X** carrying the majority of the genetic background of strain A but enriched with the characteristics of interest from strain B.



FX10

Fermentation performance
Volume



CX9

Fermentation performance
Typical characters



X5

Thiols production



XPURE

Low VA
Low SO₂
Volume



RX60

Fruity aromas expression



X16

Esters
Fermentation performance

LAFFORT & YOU

SHARED RESOURCES & EXPERTISE