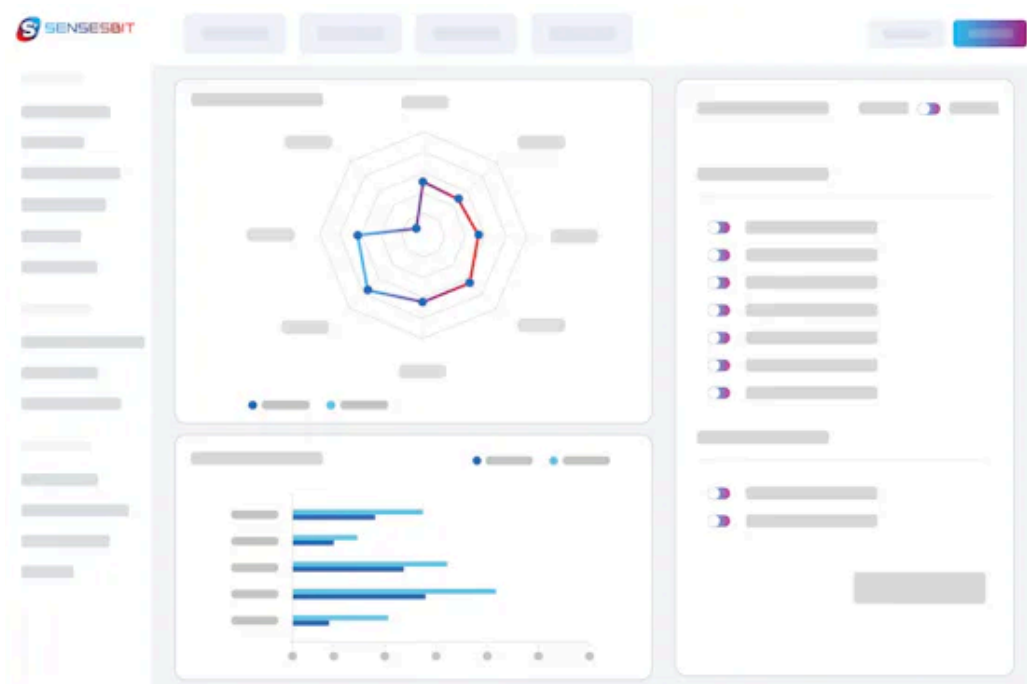# SENSORY PLAYBOOKS

SENSESBIT

Become an expert in sensory analysis

SENSESBIT

Panel validation

A panel of trained tasters is a measuring instrument and as such must be calibrated to ensure that we are obtaining correct measurements. To calibrate we must take into account three parameters: **accuracy**, **precision** and **resolution**.

The centre of the bull's eye is the actual value of the sample, each dot is an evaluation of the panel of tasters as a whole and the size of the dot represents the variation between the tasters' responses.
This target is the **ideal case**.

**High precision
High accuracy
High resolution**

Precision

If the precision is high, the panel results when assessing the same sample will be equal. There are two ways to calculate it:
**Repeatability**: It is evaluated by including a copy in the tasting session and measuring the deviation between the response obtained for the sample and for its copy.
Reproducibility: It is evaluated by including the same sample in two different sessions and measuring the deviation between the response obtained in the first session and the response obtained in the second session.
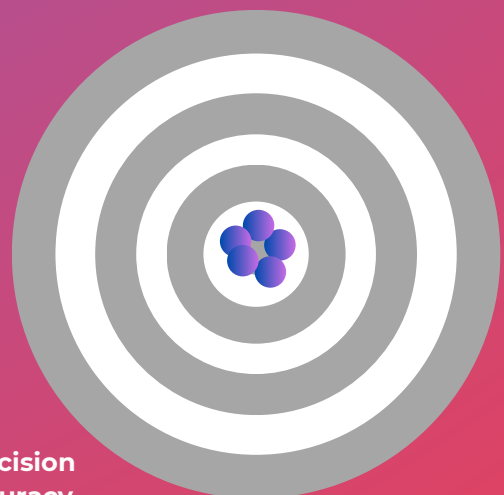
Resolution

In sensory science this is known as **homogeneity**. The smaller the variation in response between judges, the smaller the uncertainty. In other words, we will go from being able to state that the sample is between 4.5 and 5.5 to that it is between 4.9 and 5.1.

It is evaluated by measuring the deviation of each judge from the median of the panel.
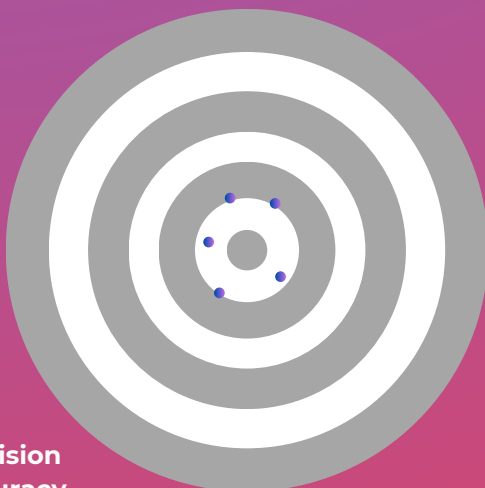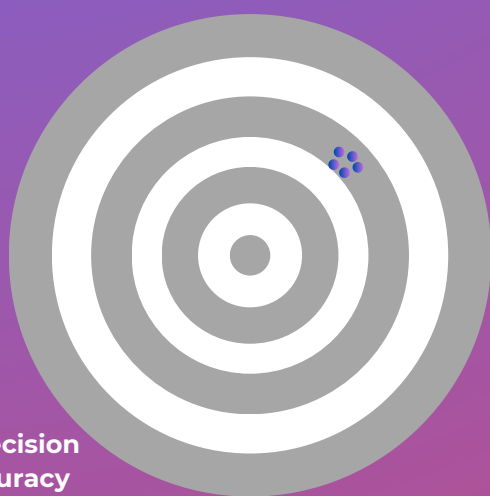
**Low precision
High accuracy
High resolution**

**High precision
High accuracy
Low resolution**

Panel validation

Accuracy

The accuracy of the panel is the ability to give the real value of the sample. In sensory analysis we calculate it by checking the deviation from the **reference**. A prerequisite is to have a reference whose sensory characteristics are known with certainty.

These references must either be stable, i.e. they must not evolve over time, or they must be repeatable, i.e. it must be possible to produce them from scratch in the laboratory.

High precision
Low accuracy
High resolution

Retraining

For each deviation, we must act in a different way:

Low precision: Each time the same sample is evaluated, the panel gives different answers. This is the most serious deviation, as it implies a problem of perception and understanding of the attributes. <u>The definition and measurement techniques of the attributes must be retrained.</u>

Low accuracy: The panel is always giving the same answer, but this answer is deviated from the real value. This is easy to fix, as the panellists are assessing the attributes well, but entering them wrongly in the scale. <u>The sensation-scale equivalence should be retrained.</u>

Low resolution: The panel mean is correct, but there is a lot of deviation between panellists. There is no homogeneity. This is a problem of consensus on perceived intensity. <u>The intensity consensus should be retrained.</u>

Anonymising tests

Judges may bias their response or pay special attention if they know they are being evaluated. The copy of the samples should have random codes that do not link them and the validation tests should not be announced.

Feedback to judges

Feedback to the judges is crucial for an improvement in the quality of the response. This feedback should always be constructive and be accompanied by the necessary exercises to improve, thus avoiding frustration for the taster.