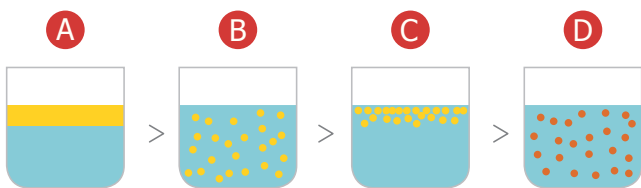


UNIQUE & INNOVATIVE PROCESS TO IMPROVE EMULSION



& How to make a good emulsion?

AN EMULSION

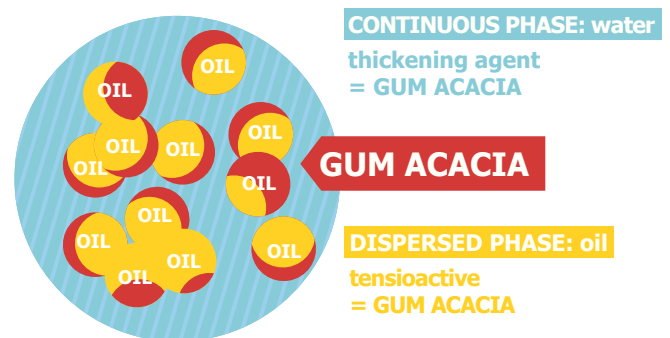


An emulsion is a homogeneous blend of several liquids that are normally immiscible: one liquid (**the dispersed phase**) is dispersed into another one (the continuous phase).

The boundary between the phases is called the **"interface"**.

Emulsifiers are amphiphile: they **reduce interfacial tension** between the two immiscible phases and can also **contribute to stabilization** of dispersed droplets with electrostatic or steric effects.

A 100% NATURAL EMULSIFIER: GUM ACACIA



Gum acacia is a **100% natural** and **vegetal** hydrocolloid: coming from acacia trees.

Gum acacia presents many functional and active properties: **stabilization** and **emulsification**.

Gum acacia **reduces the surface tension** between the two phases. It is one of the key parameters to obtain a successful emulsion.

& How to improve an emulsion?

ALLAND & ROBERT INVESTED TIME AND TALENTS TO IMPROVE EMULSION.

We implemented a unique process to select the best gums for emulsification by mixing two different approaches:

A PRACTICAL APPROACH:

In our lab we realize emulsions based on flavor recipes. We use a semi-industrial pilot equipment for homogenization to be as close as possible to our customer's conditions.

We run tests to **study long-term stability**. We accelerate the ageing process of the emulsion to obtain quick result: study the evolution of the size and the distribution of droplets by laser granulometry.

A SCIENTIFIC APPROACH:

In 2005 we invested on R&D to **identify and confirm the key indicators that measure the emulsifying power of gum acacia**. We used up-to-date equipment and measured the reduction of surface tension. We discovered that surface tension and emulsifying ability of the gum can, among other things, depends on:

- **The country of origin**
- **The soil composition**

For example a gum coming from Senegal and sandy soils will have better emulsifying capacity than a gum coming from clay soil (see the graph below).

BY COMBINING OUR KNOW-HOW AND A PERFECT TRACEABILITY AND DAY-TO-DAY TESTS, WE PROVIDE THE BEST PRODUCT FOR FLAVORS, COLORS AND BEVERAGE COMPANIES.

