

bredol[®]

Emulsifier technology for effective feed production

AkzoNobel Surface Chemistry – Pelleting



AkzoNobel

Tomorrow's Answers Today



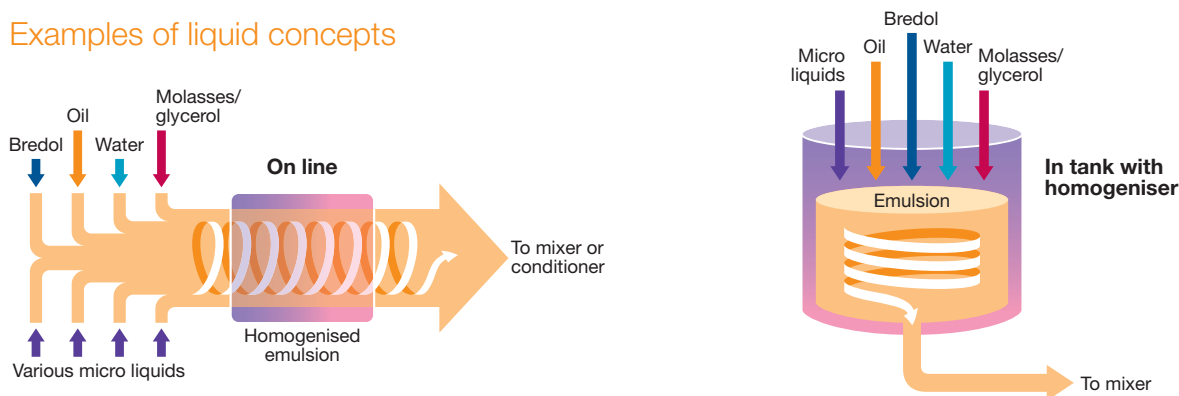
Economic pellet production with Bredol emulsifier

Bredol emulsifiers are used to obtain economic benefits in pellet production.

The concept allows greater flexibility in choice of liquids and dry raw materials without problems in the production. It leads to higher throughput with less resistance and energy consumption. Pellets of consistent quality with stable moisture levels are produced. A key to success is the ability to produce a homogeneous mixture of liquid components with the help of Bredol product's powerful emulsifying properties.

The use of liquid components becomes easier with Bredol emulsifier. Fat and water and other ingredients form a fine mix which will be evenly distributed and absorbed in the meal leading to smoother production. High viscosity products like molasses or glycerol become more manageable. Micro ingredients become better dispersed or dissolved and better utilised, pigments being one example. Practically the addition can be achieved through on line mixing or via a tank with a homogeniser.

Examples of liquid concepts



Typical advantages in production. Trial single pelleting.

Test run	Bredol ppm	Added water %	Oil in mix %	Press total Amps	Tonnes per Hour	Durability	Meal moisture	Nut moisture
Control	0	1.0	0.5	375	18	96.2	13.5	11.4
Bredol	500	1.0	0.5	355	20	96.5	13.5	12.4

In the Bredol run less energy was consumed and 11% higher output was achieved. This resulted in grinding process losses being replaced and the required moisture level was met.

Broiler trial (42 days) with added water

	Control +2% added water	Bredol 683 +2% added water
Water content in feed after production, %	12.5	13.5
Body weight, g	2321 a	2312 a
Daily feed intake, g	90.8 a	90.5 a
Feed conversion rate (FCR)	1.762 a	1.760 a

p < 0.05

Source: University of Leuven, Belgium, 2004.

The higher retained moisture content in the Bredol group did not affect the feeding and growth parameters.

Microbiological analysis of the broiler feed after two months storage

	Control + 2% added water	Bredol 683 +2% added water
Water content in feed after production, %	12.5	13.5
Aerobic bact., cfu/g	4700	2000
Moulds, cfu/g	850	<150

There was no microbiological growth despite higher moisture content in the Bredol group.

With Bredol emulsifier

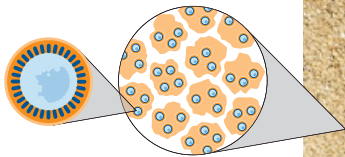
Homogeneous mixture of water and oil



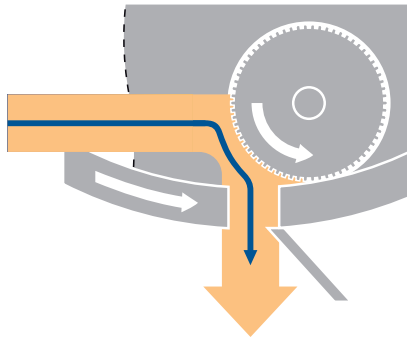
Homogeneous mixture of liquids evenly distributed and absorbed in the meal



Water in oil emulsion micelle



Fully conditioned meal

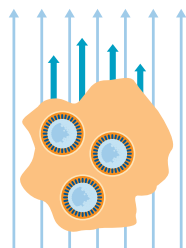


Smoother production flow at even temperature

Controlled pellet durability, starch gelatinisation and less fines with even distribution of nutrients



Improved moisture stability due to encapsulation



Traditional without Bredol

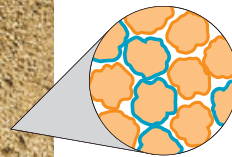
Water and oil separated



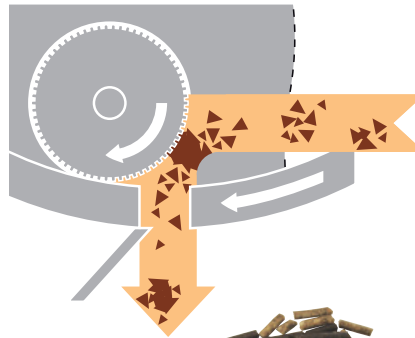
Lumps in the meal due to uneven distribution of liquids



Water and oil added separated



Partly conditioned meal



Risk for over heating and blocking

Variations in product form and nutritive value



Surface moisture evaporating during cooling



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rights and, accordingly, AkzoNobel is actively monitoring the industry for infringement and is in the front line when it concerns feed and food health & safety as well as environmental care. The quality system is based on HACCP principles and is FAMI-QS certified.

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