

Emulsifier technology for effective feed production

Pelleting

AkzoNobel 



bredol[®]

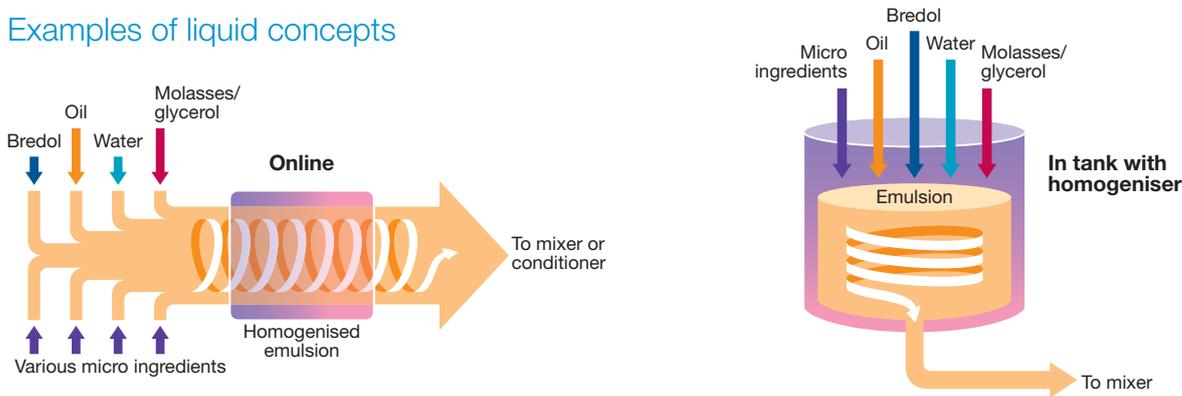
Cost effective pellet production with Bredol emulsifier

Bredol is the key to succeed in producing a homogeneous mixture of liquid components

The Bredol concept allows greater flexibility in choice of liquids and dry raw materials without problems in 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. In practice, the addition can be achieved through online mixing or via a tank with 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

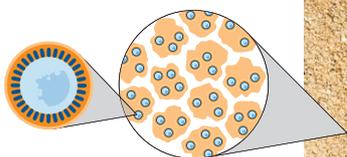
Homogeneous mixture of water and oil



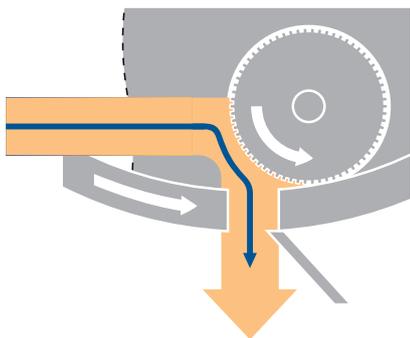
Homogeneous mixture of liquids evenly distributed and absorbed in the meal



Water in oil emulsion micelle



Fully conditioned meal

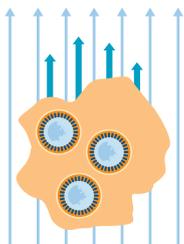


Smoother production flow at even temperature

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



Improved moisture stability thanks to encapsulation



Without Bredol

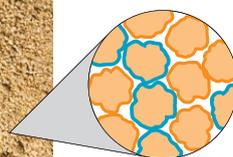
Water and oil separated



Lumps in the meal due to uneven distribution of liquids



Water and oil added separately



Partly conditioned meal

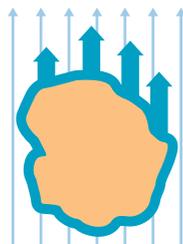


Risk for over heating and blocking

Variations in product form and nutritive value



Surface moisture evaporating during cooling



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- More renewable energy and materials, less fossil-based;
- More value chain focus, less introverted thinking.

Employing our new strategy of radical efficiency, we work with customers and suppliers to open infinite possibilities to a finite world. Learn more at www.akzonobel.com/planetpossible

Number 1

our position in the Materials industry group on the 2015 Dow Jones Sustainability Index.

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share of revenue we aim to achieve by 2020 from products with a sustainability advantage for customers.

More than 25%

reduction we aim to achieve in our cradle-to-grave carbon foot print per ton of product by 2020.

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