

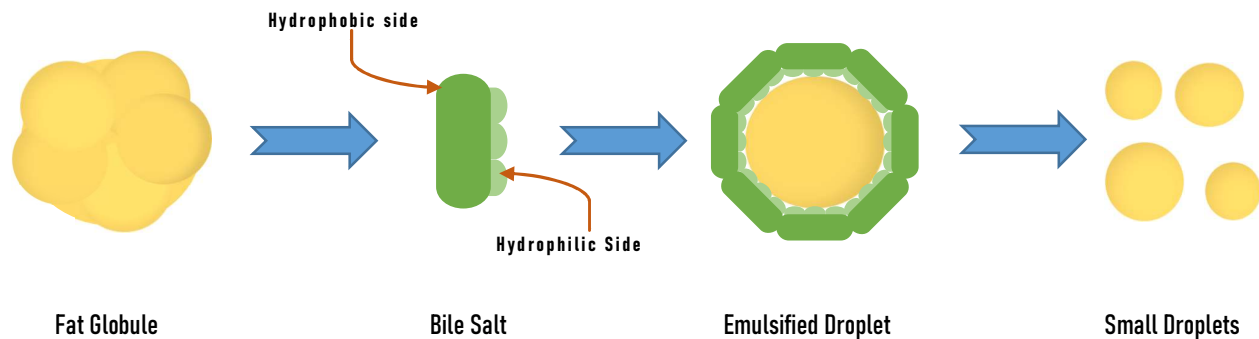
QMICELLAR

-SUPER TOOL FOR FAT DIGESTION-



WHAT IS EMULSIFICATION?

Emulsification is the process of dispersing one immiscible liquid into another liquid with the help of an emulsifier. In poultry production, it is essential for incorporating fat-soluble nutrients into feed, thereby enhancing the nutritional value and promoting better growth, health, and productivity in birds.



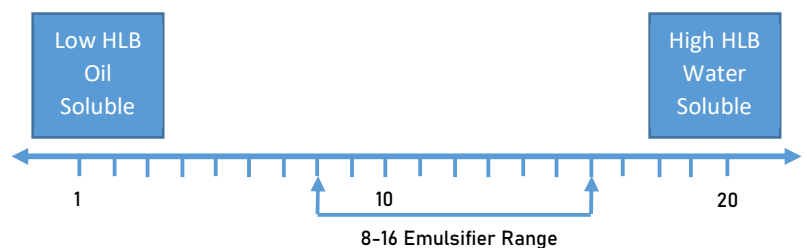
REQUIREMENT OF EXTERNAL EMULSIFIER

Proper feed formulation and gut health maintenance are essential for efficient digestion and nutrient absorption. The natural emulsifiers in the body are limited due to the immaturity of the digestive system and unable to cope with the high energy additions in feed which makes use of external sources of emulsifiers through feed formulation an integral part of poultry nutrition so as to save this expensive energy resource.

STANDARDS FOR EMULSIFIER SELECTION

HLB Value

HLB (hydrophilic-lipophilic balance) is the most commonly used parameter while choosing an emulsifier. As a thumb rule the water intake is twice as much as feed and therefore emulsifier with high HLB value (hydrophilic) is the natural choice while choosing a feed emulsifier.



CMC (Critical Micelle Concentration)

CMC (Critical Micelle Concentration) is the point at which surfactant molecules form micelles in a solution, crucial for emulsion stability. Low CMC is much better.

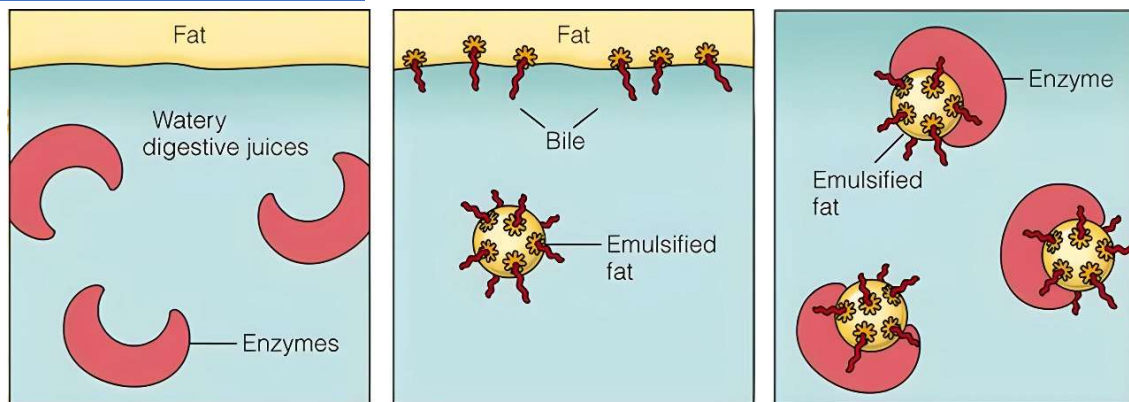
Surface Tension

Surface tension refers to the cohesive force at the surface of a liquid, affecting the spreading and stability of oil droplets in water during emulsification. Smaller the surface tension of substance, stronger the surface activity.

COMPONENTS OF QMICELLAR

- **Sophorolipid:** It has a high surface and interfacial activity, thus resulting in excellent surfactant properties. Additionally, with low critical micelle concentration (CMC) values, it performs well at concentrations much lower than those of the regular synthetic surfactants. Possesses inhibitory properties against several pathogens like bacteria, fungi and virus
- **PEGR:** A nutritional emulsifier with greater HLB value and requires less energy to work within gut it increases the surface area available for digestive enzymes, such as lipases, to act upon.
- **Lysophosphatidylcholine:** It acts as fluidity modulators which increase permeability resulting in rapid absorption of nutrients. Also forms tightly packed micelles that are well absorbed.
- **Bile Salts:** Facilitating emulsification, enzyme activation, and fat transport, bile salts ensure that poultry can effectively utilize dietary fats for energy production, growth, and overall health.
- **Lipase:** Hydrolyse emulsified fat and convert it to free fatty acids and mono-glyceride.

LIPASE AND FAT ABSORPTION



PRODUCT ACTION

Qmicellar 3 Step Support in fat digestion

1. Emulsification trio by Sophorolipid, PEGR & lysophosphatidylcholine works efficiently in aqueous environment of GI tract.
2. Hydrolysis by Lipase enzyme.
3. Absorption- Sophorolipid is more efficient biosurfactant with low CMC(2.61×10^{-5}) to reduce surface tension & form Micelle for better absorption.

WHY QMICELLAR IS SUPER TOOL FOR FAT DIGESTION

- Improves growth performance, feed efficiency & production efficiency over conventional emulsifier.
- Reduce cost of energy from fats & oils by using our matrix.
- Reduces fat and protein excretion than conventional emulsifier.
- Homogenous distribution of fat in feed.

USAGE/DOSAGE

Poultry: 200-300 gram/ton

Swine: 200-300 gram/ton

Aqua: 300-400 gram/ton

SHELF LIFE

24 Months

PACKAGING

25kg Laminated paper bag

QMICELLAR

-SUPER TOOL FOR FAT DIGESTION-



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