



# Advanced Oil System™

*Patent-pending technology significantly improves oil recovery rate and efficiency compared to current technology*

ICM's Advanced Oil System™ (AOS™) offers a unique and inventive approach to oil separation, breaking one of the biggest barriers to consistent, high recovery rates: emulsion.

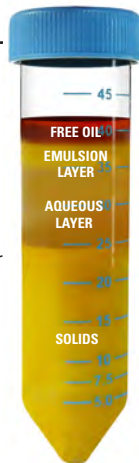
## Advanced Oil System™ – The Emulsion Breaker

ICM's next-generation AOS™ technology is the answer to achieving improved revenue through a consistent, high-quality, high-volume oil product.

### Emulsification: A quick science review

Emulsification is highly undesirable in the syrup stream of plants that would like to recover and market their corn oil. Why? An emulsion is a mixture of two or more unblendable liquids. For example, you can mix oil and water briefly, but they quickly separate, and do not remain blended. Add in egg yolk, an emulsifier, and the mixture (now mayonnaise) doesn't separate.

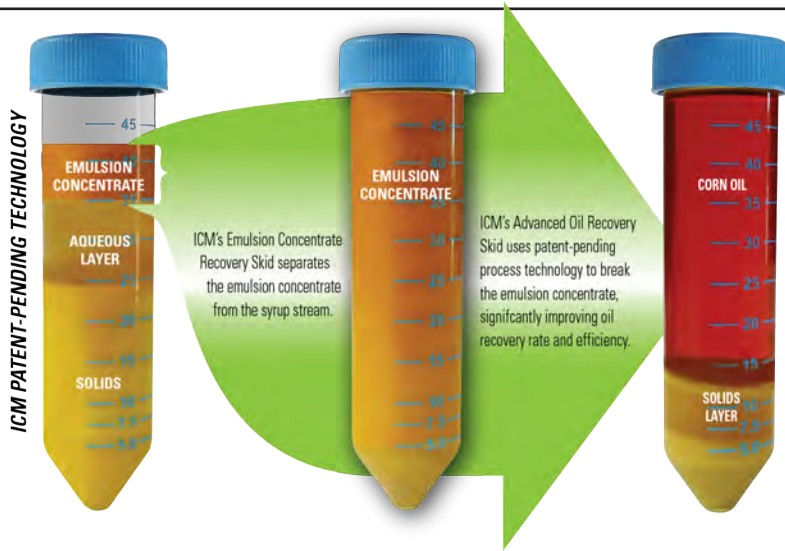
This is similar to the emulsification process at your plant. Your syrup stream isn't just water and corn oil. Soluble proteins, sugars, and starches all act as emulsifiers. An ionization charge that can change with corn and/or water quality also contributes to emulsification, as does the mixing action from mechanical shear from being pumped through your system. In standard facilities, this isn't a problem – it doesn't matter because the syrup is either sold or added to distillers grains. It's when plants want to enter the profitable corn oil market that emulsification becomes a problem, locking up valuable oil.



### Current technology doesn't deal well with emulsification

Most current market solutions involve centrifugation of the free oil from the syrup stream, essentially skimming it off the top, leaving behind the oil contained in the emulsion. Additionally, the quantity or volume of emulsion present can vary due to corn quality and other factors, and the presence of emulsion is a barrier to consistent and efficient extraction of oil.

### ICM's AOS™ breaks 98% of the emulsion





**Learn more. Contact us today.**  
Contact Brock Beach, Oil Separation  
Manager, to learn more about how  
our Advanced Oil System solution can  
positively impact your operations.

**316.977.6211**

## How is AOS™ different than current process technology?

ICM's proprietary next-generation process technology is unique because of its emulsion-breaking capabilities. We are able to extract up to 98% of the corn oil from the emulsion concentrate stream that enters our process.

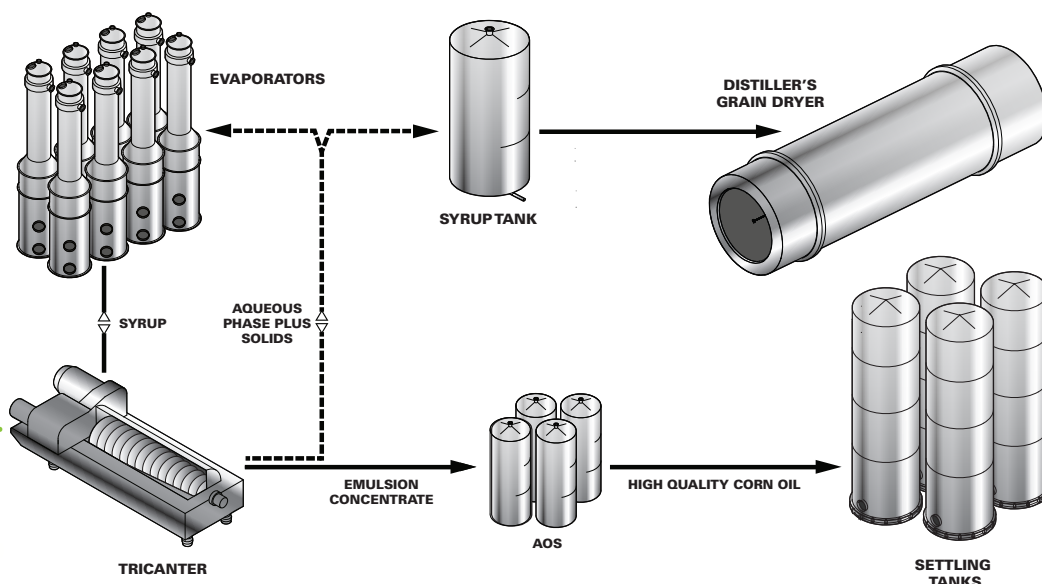
- Best emulsion-breaking process technology
- Consistent oil recovery rates
- ROI in less than 12 months
- Decouples oil extraction from plant operations

## Additional Benefits

- Separation occurs post pretreatment instead of as a pretreatment step. (Your plant handles a 10-gpm stream instead of a 200 gpm stream.)
- Fully recoverable chemical additive – no ongoing chemical cost
- Low energy and operator input required – low operational costs
- Increased recovery efficiency – increased profitability
- Increased oil quality – market favorability

## Available as a stand-alone Solution, and also compatible with ICM Tricanter® Oil Separation System

ICM's two-skid AOS™ can be sold as a stand-alone unit to plants without oil extraction technology, or we can integrate our solution with existing ICM oil separation technology, reducing your capital cost for oil separation.



the **energy** of innovation™

*For general information purposes only based on testing. No effort has been made to predict future performance, and the results shown here are not guaranteed for any particular project.*

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