



**OXILVA**

NATURAL PERFORMANCE ENHANCER

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# **EMULSION STABILISATION**

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When an oil in water emulsion was prepared with **Exilva**<sup>®</sup>, the stability was improved, and the phase separation was completely prevented at a given concentration. Exilva can function as stabiliser in an emulsion due to its very high yield stress provided by the fibril network.

In this experiment, Exilva MFC was dispersed in water, and then a simple oil-in-water emulsion was prepared at room temperature and at different concentrations of Exilva.

The emulsion consists of 80% aqueous phase (water and MFC) and 20% oil phase (paraffin oil).

The concentration of MFC is varied from 0.1 wt% to 1 wt% of the total emulsion to demonstrate the effect of the network and MFC concentration on emulsion stabilisation.

The figure below shows how MFC can stabilise the oil droplets dispersed in water in a simple oil and water mixture.

Increasing the concentration of MFC in the emulsion improves the emulsion stability.

At concentrations above 0.4 wt% active fibre content of MFC, and for this simple oil and water mixture, the MFC 3D network is strong enough to hold the dispersed oil droplets in place and provide total emulsion stability without the need for an emulsifier.



The dispersed oil droplets do not sediment or float, flocculate or coalesce, and the emulsions are stable for more than 24 months at room temperature.

### Key takeaways

- ✓ Improves stability of oil in water emulsions
- ✓ Emulsion stability is enhanced with increase in Exilva concentration
- ✓ A bio-based rheology modifier that can prolongate emulsion shelf-life