



CASE STUDY

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Product quality improvement & reduction in solvent losses forces oleoresin industry to adopt continuous evaporators



# Using a Rising Film Evaporator for pre-concentration and a Thin Film Evaporator as stripper to reduce solvent loss and improve product quality

Case Study | Spice Extracts Industry

A customer from the Oleoresin industry was using traditional batch kettles for removing organic solvents from the spice extracts. The prolonged time in the kettles was affecting the quality of the extracts, apart from unacceptable solvent losses.

An Agitated Thin Film Evaporator (ATFE) would be an obvious choice for this application. However, due to dilute feed of large volumes, a suitable pre-concentration step was required.

A Falling Film Evaporator was ruled out as the upstream filtration step was prone to leave some particles in the feed stream. Hence, a **Rising Film Evaporator (RFE)** was considered. The absence of any kind of distributor makes it suitable for such applications.

Trials were conducted in the **Technoforce Pilot Plant**. Pre-concentration on the RFE reduced the size of the ATFE, which was required as the finisher. The product quality was significantly better than the conventional batch process.

The commercial plant was commissioned in about 6 months. Continuous operation and a closed system ensured minimal solvent losses.

Over the next few years the same customer installed 3 more systems. The spice extracts market has about **30 systems** in operation which are supplied by Technoforce.

[www.technoforce.net](http://www.technoforce.net)

## Our Expertise

Evaporation

Drying

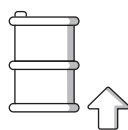
High Vacuum Distillation

Extraction

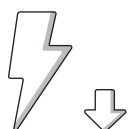
Crystallization

Zero Discharge Systems

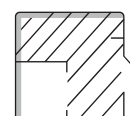
**TECHNOFORCE™**



**5 %**  
More solvent recovery



**30 %**  
Less energy required



**25 %**  
Less Required Area