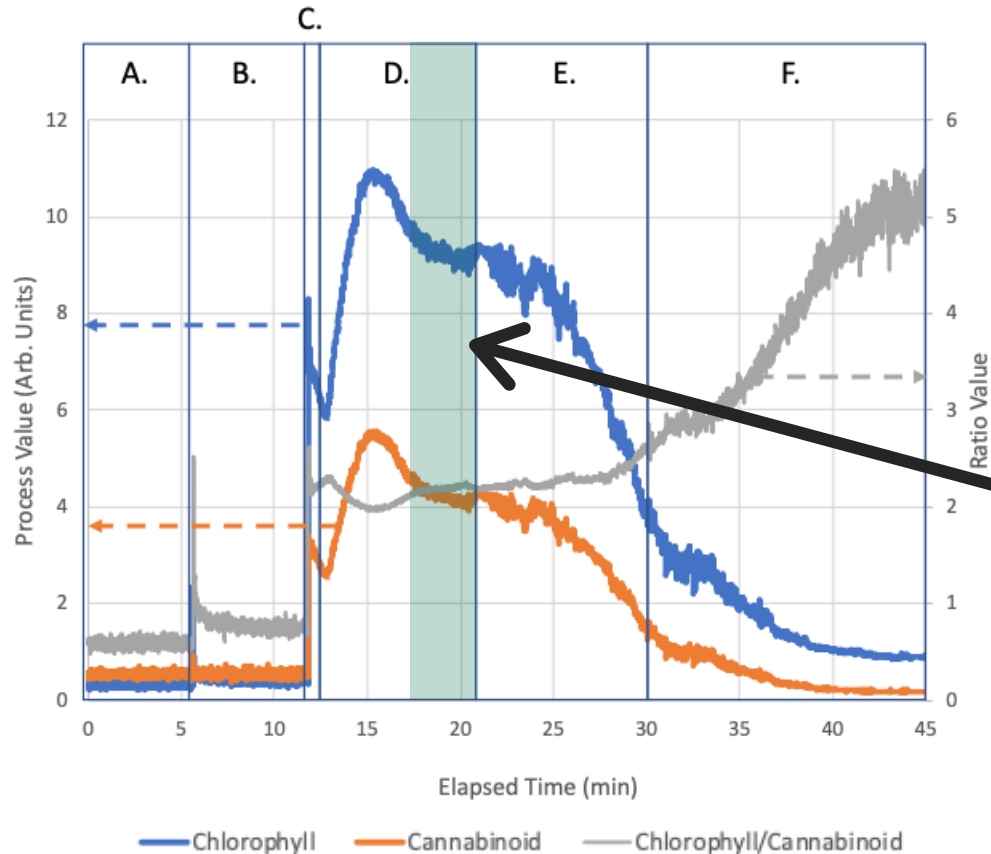


EXTRACTION FINDER: ETHANOL EXTRACTION DATA



A. Filling Extractor with Ethanol (Flow Off)

- No flow over sensor; no signal

B. Agitating Extractor Then Soak Cycle (Flow Off)

- No flow over sensor; initial signal noise due to mechanical vibrations

C. Flow Started/Equilibrating Flow

- Full flow over sensor; signal spikes then drops after initial fluid flow

D. Recirculating Ethanol

- Full flow over sensor; signal increases/decreases as Cannabinoid concentration equilibrates and becomes homogeneous in ethanol
- **Extraction end point (solvent saturation) determined by Cannabinoid and Chlorophyll levels plateauing over time.**

E. Emptying System Using N₂ Gas

- Extractor being emptied with nitrogen gas and system no longer chilled; both Cannabinoids and Chlorophyll signals decrease

F. Emptying Residual Alcohol from Extractor Reservoir

- Decrease in both Cannabinoid and Chlorophyll signals; increase in ratio of Chlorophyll to Cannabinoid from system heating (ethanol preferentially extracting Chlorophyll in reservoir)

"We shortened the time of our extraction to match when the unit was showing us we had absorbed the majority of the cannabinoids."



Summary

The assembly is attached to the extractor's discharge line. It analyzed and displayed real-time Cannabinoid and Chlorophyll levels. The readings were used to know when the ethanol was no longer extracting from the plant matter. This was determined by the signal intensity plateauing; in other words, the concentration levels stopped changing. This info was used to shorten the extraction time.

Outcome

The operator would previously recirculate ethanol for ~30 minutes. After one week of using the Extraction Finder, he was able to shave his process down to ~8 minutes because he saw no increase in Cannabinoid levels. This completely changed how his company operated their extractions.

EXTRACTION FINDER

Model 1 Extraction Finder - Polycarbonate Enclosure