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Extraction efficiency of ground Psilocybe Cubensis in water

at different temperatures and extraction times.

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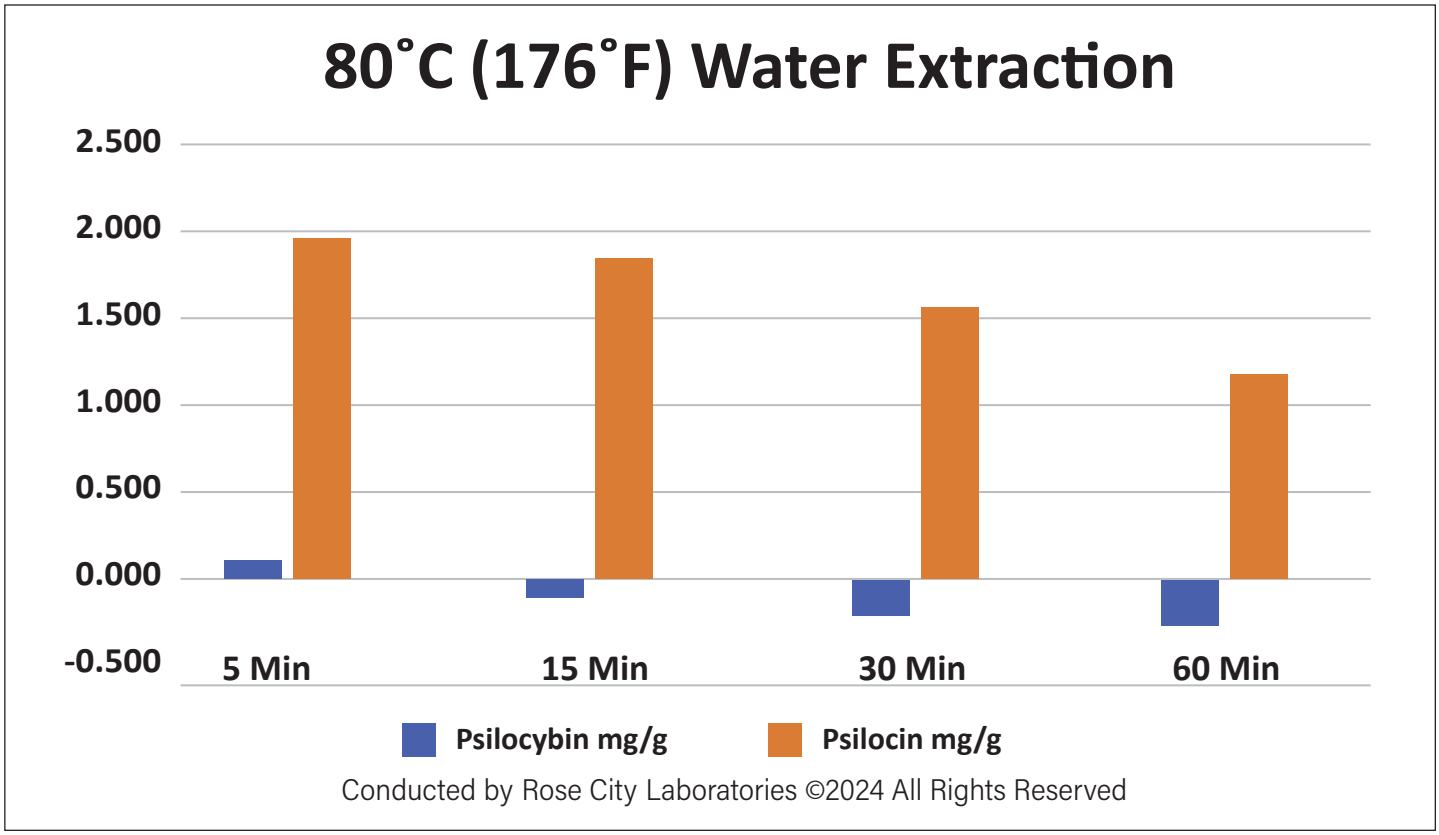
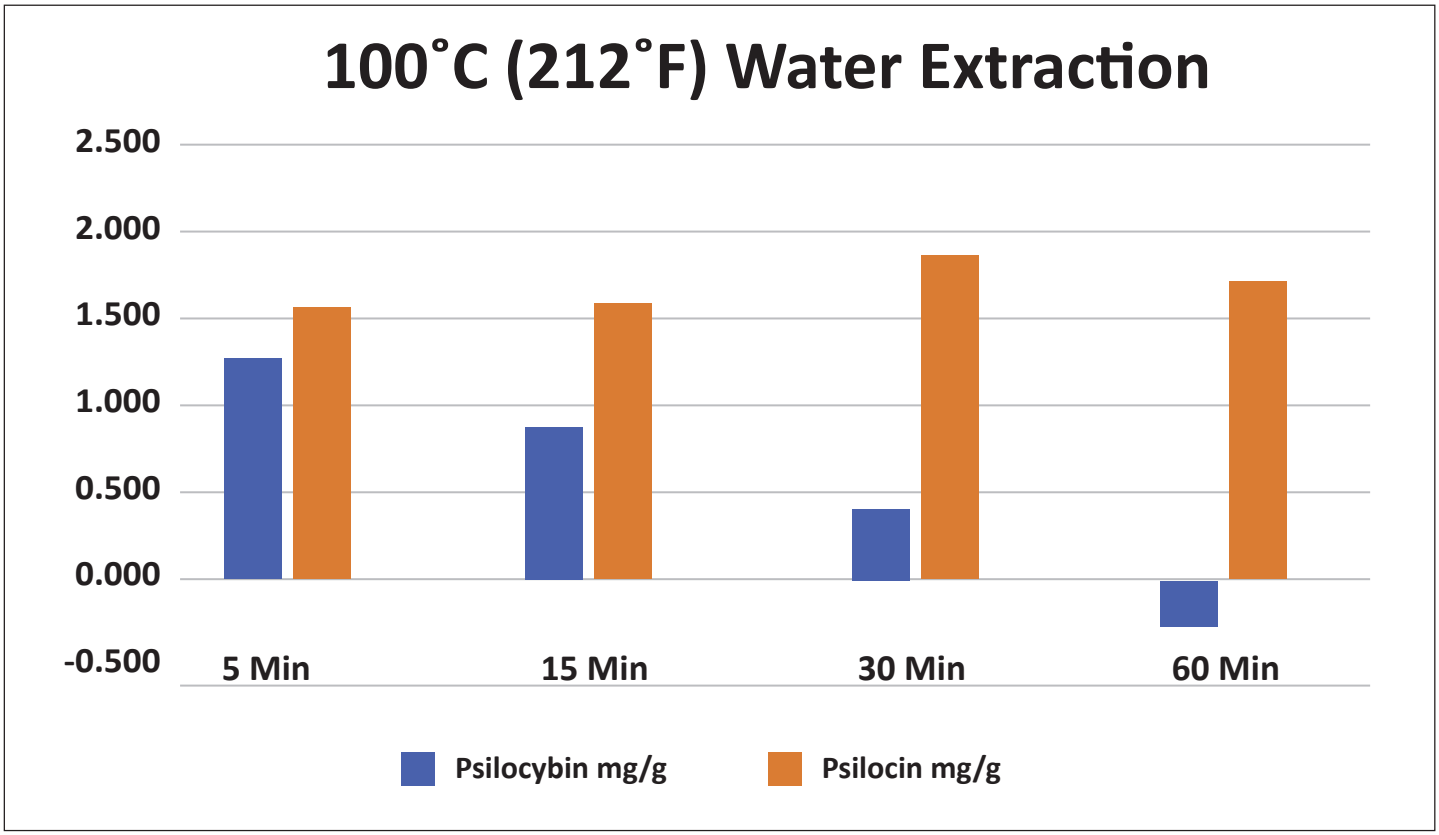
Study Parameters
A total of 9 samples of ground and homogenized Psilocybe Cubensis fruiting bodies were prepared by weighing out 100-110mg of the material into 15 ml falcon tube. The first group of 4 tubes had 10ml distilled water at 80°C (176°F) added and were lightly agitated every few minutes. The second group of 4 tubes had 10ml distilled water at 100°C (212°F) added and were lightly agitated every few minutes. 1 tube was the control and had 10ml of MeOH at room temperature added and was slowly agitated for 5 hours.

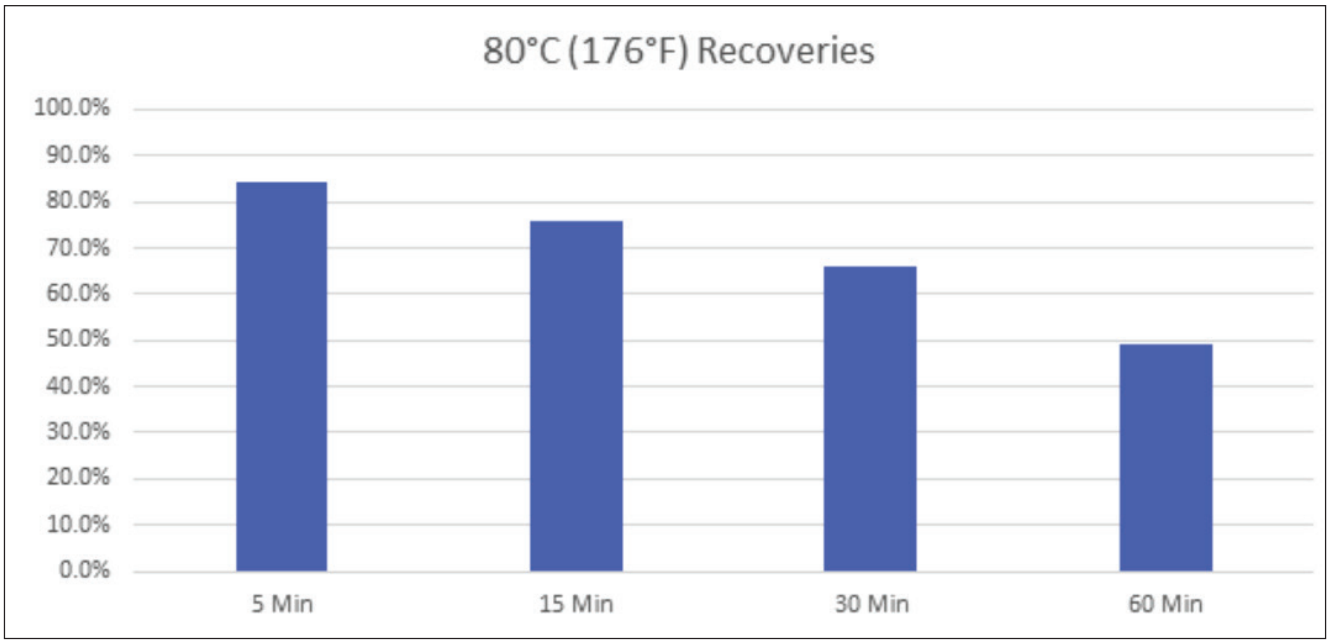
At the 5-, 15-, 30- and 60-minute mark, one tube from each group was filtered and immediately run on the HPLC for potency of psilocybin and psilocin. The control was filtered and run after 5 hours of slow agitation.

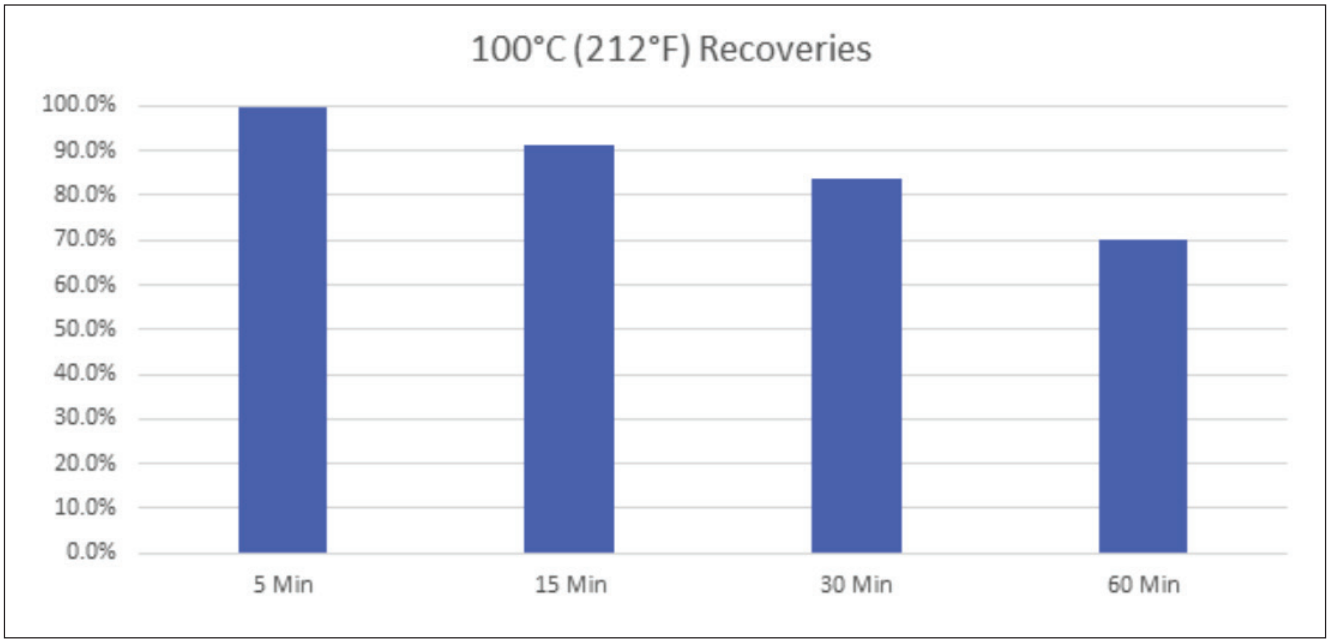
Results
The results of the potency test and the recovery percentage calculated based on Potential Psilocin (Psilocybin*0.719+Psilocin) compared to the control sample are in the table below. Negative values should be considered zero and are not utilized in the Potential Psilocin calculation.

Temp	Sample	Psilocybin mg/g	Psilocin mg/g	Potential Psilocin mg/g	% Recovery
80C	5 Min	0.135	1.953	2.051	84.5%
	15 Min	-0.123	1.839	1.839	75.7%
	30 Min	-0.187	1.600	1.600	65.9%
	60 Min	-0.254	1.199	1.199	49.4%
100C	5 Min	1.214	1.554	2.426	99.9%
	15 Min	0.836	1.615	2.216	91.3%
	30 Min	0.395	1.754	2.038	83.9%
	60 Min	-0.271	1.706	1.706	70.2%
Control	4-Hour MeOH (methanol)	1.929	1.041	2.428	100.0%









Observations:
As expected, the extraction efficiency of the hotter water is better in the initial extraction and both water extractions appear to convert a substantial amount of the psilocybin into psilocin, but it is interesting to note that this conversion appears more rapid in the lower temperature samples.

As observed in other trials, the water appears to degrade the psilocybin and psilocin quite rapidly, but it is surprising to observe that this degradation appears much more rapid in the lower temperature samples, suggesting that the unknown mechanism of the degradation is partially inhibited or neutralized by the boiling temperature water.

Overall, this data shows that water is not a suitable extraction solvent for analytical or processing purposes, but is quite efficient for application where the resulting water extract is immediately consumed.