

Energy measurement by using a power meter

The price of the energy required to extract agar by the optimized conventional extraction method and the optimized UAE was calculated by pre-setting the price of energy on 1 €/ kW·h in a power meter. The systems employed were connected to a power meter which was plugged to the electric supply. The energy usage was measured twice per experiment (R1: repetition 1, and R2: repetition 2), except in the case of the ultrasound probe, only measured once.

| Experiment | Cost of energy in Euros |
|--|----------------------------------|
| Optimized conventional extraction (6 h, 110 °C) R ₁ | 16.54 (oil bath) |
| Optimized conventional extraction (6 h, 110 °C) R ₂ | 20.29 (oil bath) |
| UAE optimized extraction (1 h, 100% power) R ₁ | 9.53 (water bath) |
| UAE optimized extraction (1 h, 100% power) R ₂ | 4.90 (water bath) 1.0 (US probe) |