

**UTILIZATION OF SILK INDUSTRY WASTE SILKWORM PUPAE FOR
EXTRACTION OF OMEGA 3 FATTY ACID THROUGH SUPER CRITICAL FLUID
EXTRACTION (SCFE) TECHNIQUE IN PILOT SCALE PRODUCTION FACILITY
FOR VALUE ADDED PRODUCTS**

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ABSTRACT

The spent silkworm pupae of CSR2 x CSR4 were subjected for different drying methods like sun drying, solar drying and Tray drying and sterilized for extraction of pupa oil content omega 3 fatty acids through SFE technique in pilot scale production facility. The tray drying method is the good and economic method of proper drying of silkworm for extraction of pupa oil through SFE. Different studies were carried out to optimize the pressure and temperature for extraction of high yield pupa oil. The highest yield of pupa oil (content omega 3 fatty acid) obtained when experiment was conducted at 280 bar pressure, 35 °C temperature and 26 g/min CO₂ flow rate. Below 280 bar pressure, the yield of pupa oil also decreases. As per the study conducted, the pupa oil is much superior in SFE process than conventional process.

KEYWORDS: *Silkworm Pupa, Waste, Omega3 Fatty Acid, Super Critical Fluid Extraction & Reeling*

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