



Document details - Oil Cakes as Sustainable Agro-Industrial Feedstock for Biocarbon Materials

1 of 1

[Export](#) [Download](#) [More...](#) >

ChemBioEng Reviews
Volume 9, Issue 1, February 2022, Pages 21-41

Oil Cakes as Sustainable Agro-Industrial Feedstock for Biocarbon Materials(Review)

Siva Sankari, M., Vivekanandhan, S., Misra, M., Mohanty, A.K.

^aV. H. N. S. N. College (Autonomous) Virudhunagar, Sustainable Materials and Nanotechnology Lab (SMNL), Department of Physics, Tamil Nadu, 626 001, India

^bUniversity of Guelph, Crop Science Building, Bioproducts Discovery and Development Centre (BDDC), Department of Plant Agriculture, 117 Reynolds Walk, Guelph, ON N1G 1Y4, Canada

^cUniversity of Guelph, Thornbrough Building, School of Engineering, 80 South Ring Road E, Guelph, ON N1G 1Y4, Canada

Abstract

The demand for vegetable oil is increasing for both food and non-food applications, which leads to the generation of a huge amount of oil cakes. The rising annual production requires alternative applications for sustainable operations of oil mills, especially those involved in non-edible oil production. Hence, the value-added uses of oil cakes such as environment remediation (metal absorption), composite fabrication (as fillers, reinforcements), nanoparticle synthesis (as reducing and stabilizing agent), and production of carbonaceous materials (as carbon source) were extensively explored in recent years. Among them, the thermochemical conversion of oil cakes into carbonaceous materials (biochar and activated carbon) received great interest as the demand for biocarbon materials increases exponentially. Oil cake-derived biocarbon materials found a wide range of technological applications. With this perspective, recent developments in oil cake-derived carbon materials and their diverse applications are reviewed. © 2021 Wiley-VCH GmbH

Author keywords

[Agro-industrial feedstock](#) [Biocarbon](#) [Biomass](#) [Oil cakes](#) [Pyrolysis](#) [Vegetable oil](#)

Indexed keywords

Engineering controlled terms: [Activated carbon](#) [Feedstocks](#) [Metal nanoparticles](#) [Pyrolysis](#) [Synthesis \(chemical\)](#)

Engineering uncontrolled terms: [Agro-industrial feedstock](#) [Annual production](#) [Biocarbon](#) [Carbonaceous materials](#) [Food applications](#) [Industrial feedstock](#) [Non-edible oil](#) [Oil cakes](#) [Oil-production](#) [Sustainable operations](#)

Engineering main heading: [Vegetable oils](#)

Funding details

Funding sponsor	Funding number	Acronym
Ontario Research Foundation	Round-7 (ORF-RE07)	ORF
Natural Sciences and Engineering Research Council of Canada See opportunities by NSERC ↗	400320	NSERC
Ontario Ministry of Agriculture, Food and Rural Affairs	030332	OMAFRA

Cited by 6 documents

Ferchichi, N. , Toukabri, W. , Hammami, I.

Valorization of Oil Cakes as a Soil Amendment for Wheat Cultivation Through Laccase-Producing Bacteria *Bacillus pumilus*

(2023) *Journal of Soil Science and Plant Nutrition*

Manonmani, V. , Vinothini, N. , Poovarasan, T.

Effect of Orgo-nutri Priming on the Germination and Seedling Traits of Groundnut (*Arachis hypogaea* L.)

(2023) *Legume Research*

Nath, P.C. , Ojha, A. , Debnath, S.

Valorization of Food Waste as Animal Feed: A Step towards Sustainable Food Waste Management and Circular Bioeconomy

(2023) *Animals*

[View details of all 6 citations](#)

Inform me when this document is cited in Scopus:

[Set citation alert >](#) [Set citation feed >](#)

Related documents

Find more related documents in Scopus based on:

[Authors >](#) [Keywords >](#)

SciVal Topic Prominence

Topic:
Prominence percentile: