Table S1. A few selected patents on innovative application of keratinous biomass

Title	Patent Number	Weblink	Inventor	Status
Method of preparing of keratin fertilizer with an additive of humic acids in colloid form	WO2016182515A1	https://patents.google.com/patent/WO2016182515A1/en?q=(keratin+fertilizer)&oq=keratin+fertilizer	Szoke et al.	Active
Process for production of keratin microfibers and protein hydrolysate from poultry feathers via microbial hydrolysis	EP4050107A1	https://patents.google.com/patent/EP4050107A1/en?q=(keratin+fertilizer)&oq=keratin+fertilizer&page=8	Ibrahim, M.H.A	Pending
Agricultural admixtures	EP3665140B1	https://patents.google.com/patent/EP3665140B1/en?q=(keratin+fertilizer)&oq=keratin+fertilizer&page=3	Morash et al.	Active
Digestion of keratin	US10030099B2	https://patents.google.com/patent/US10030099B2/en?q=(keratin+fertilizer)&oq=keratin+fertilizer&page=3	Tabor et al.	Active
Fertilizer based on keratin hydrolysate and method of preparation	RO133338A2	https://patents.google.com/patent/RO133338A2/en?q=(keratin+hydrolysate)&oq=keratin+hydrolysate	Gaidau et al.	_
Keratin hydrolysate for oral cosmetic use	EP3675811B1	https://patents.google.com/patent/EP3675811B1/en?q=(keratin+hydrolysate)&oq=keratin+hydrolysate	Sergheraert R.	Active
Improved method for producing highly digestible hydrolyzed keratinaceous material	AU2021362720A1	https://patents.google.com/patent/AU2021362720A1/en?q=(keratin+feed)&oq=keratin+feed	Fillières R.	Pending
Methods for extracting keratin proteins	US11034722B2	https://patents.google.com/patent/US11034722B2/en?q=(keratin+protein)&oq=keratin+protein	Burnett L.	Active
Use of nitrogen-containing compounds as plasticizers for peptide-based biopolymers and uses thereof	US10595546B2	https://patents.google.com/patent/US10595546B2/en?q=(feather+keratin)&type=PATENT&oq=(feather+keratin)+type:PATENT&page=6	Schmidt W.F.	Active

Table S2. Qualitative evaluation of sediment-associated bacteria for lipolytic potentials on tween 80 amended agar media

Isolate Code	Precipitation around colony	Precipitation zone (mm)
ACT001	ND	0
ACT002	ND	0
ACT003	+	9
ACT004	++	15
ACT005	ND	0
ACT006	ND	0
ACT007	ND	0
ACT008	ND	0
ACT009	ND	0
ACT010 (TTs1)	+++	30
ACT011	ND	0
ACT012	ND	0
ACT013	+	11
ACT014	ND	0
ACT015	ND	0
ACT016	+	12
ACT017	ND	0
ACT018	ND	0
ACT019	+	10
ACT020	ND	0

(+) = Small precipitate; (++) = moderate precipitate; (+++) = large precipitate;
ND – precipitate not detected.

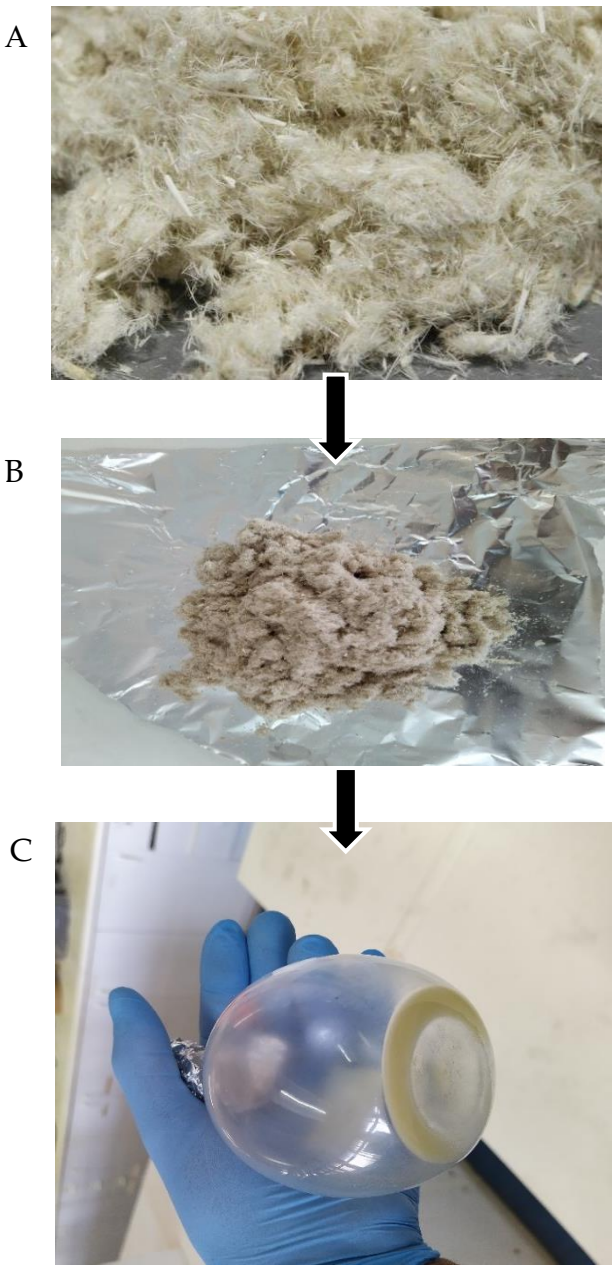

Figure S1: A representative flow of crude fat extraction showing (A) raw chicken feather, (**B**) chicken feather post-extraction (**C**) crude fat at the bottom of the flask.