



LIFE13 ENV/IT/000470 "ECODEATTING"

Environmentally friendly natural products instead of chemical products in the degreasing phase of the tanning cycle



Action B3 of the project Demonstration of natural products defatting at a pre-industrial level

Beneficiary responsible for implementation: Newport, Iccom, Unifi

Duration
01.10.2014 to 30.09.2016

Total Budget
€ 1,035,556.00

EU contribution
€ 517,778.00



Work Procedure

Stage	%	Product	°C	Rotation (min)	Action
Desalination	100	H ₂ O	30		
	0.1	Na ₂ S		60	
	200	H ₂ O	27	5	drain
Soaking	80	H ₂ O	27		
	0.15	Ledermol 51			
	0.2+0.2	EDF20 + Basic 14			
	0.35	Prolime RBE			
	0.8	Na ₂ CO ₃		180	
	0.5	Linedeg ARG		120	drain
Liming	100	H ₂ O			
	0.3	Linedeg ARG			
	1.5	NaHS			
	2.0	Ca(OH) ₂		30	
	0.2	Basic 14			
	2.5	Na ₂ S			
	3.5	Ca(OH) ₂		60	
	0.25	Prolime NX			
	0.2	EDF20			
	20	H ₂ O		60	ovn
100	H ₂ O		3	drain	
Fleshing and cutting					
Delimiting	100	H ₂ O	35		
	0.1	EDF20			
	0.3	Prokal 700		20	drain
	30	H ₂ O	30		
	1	Prokal 700			
	0.2	EDF20		10	
	1.2+1.3	Prokal T		15+40	
	0.03	Ledermac 1		15	drain
Pickling	30	H ₂ O			
	5	NaCl		10	
	1	HCO ₂ H		20	
	1.3	H ₂ SO ₄		180	drain
Tanning					

EDF20

Component	%(w/w)
Lactose product	25.0
Water	45.0
Iso-C10-5mEO	25.0
Co-solvent	5.0

Newport premises



Coordinating beneficiary



Chemical Department
"Ugo Schiff"
Florence University (IT)

Work operations



Quality control



Cow hides

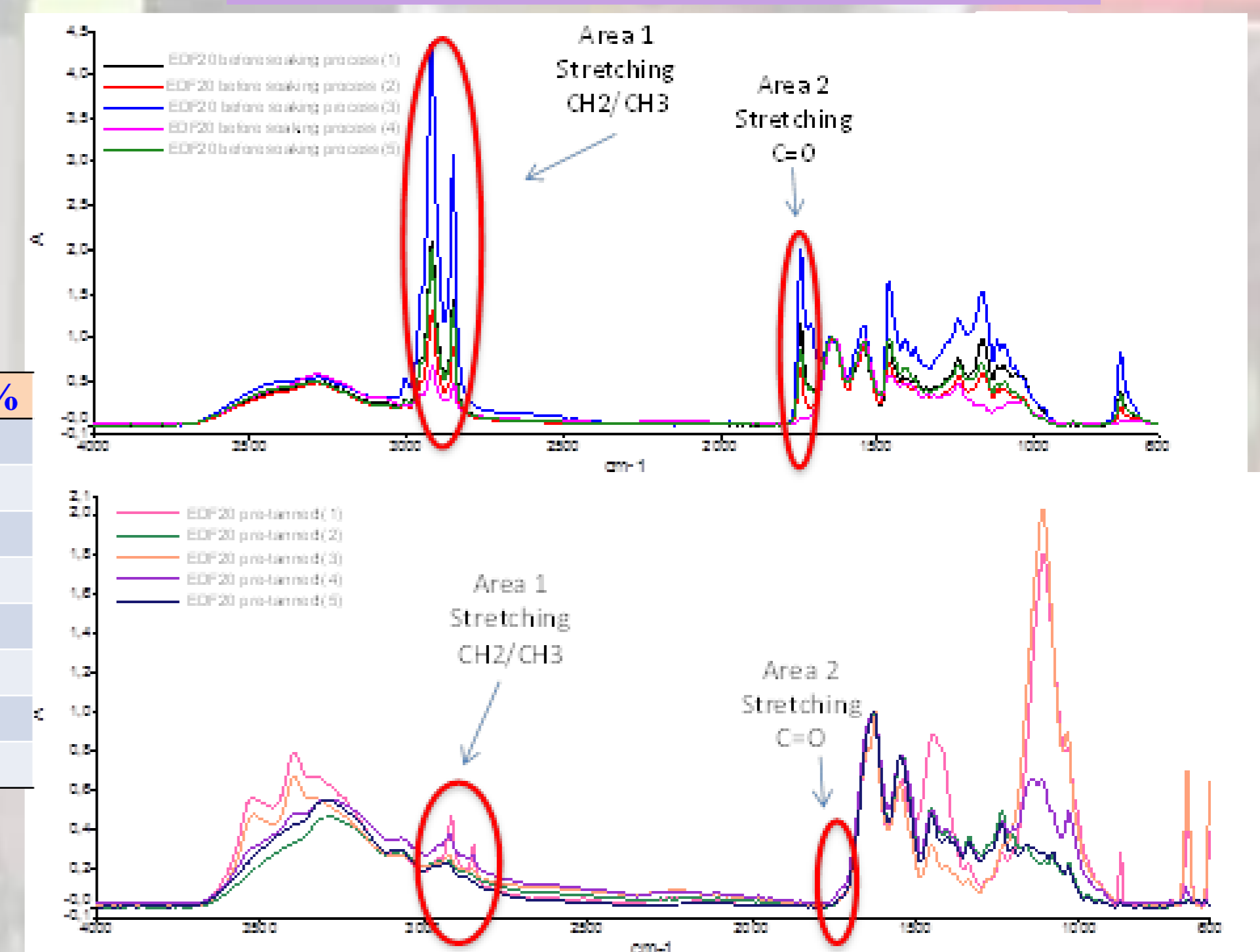
Horse hides

Thermogravimetric analysis

Sample	Hide	Product	I	II	III	IV	V	VI	Residue %
Raw	Cow	Commercial	70		329		606	799	3.9
		EDF20	67	214	321		577	811-850	4.1
	Horse	Commercial	78	316	579	846			2.3
		EDF20	64	312	579	814			2
Pretanned	Cow	Commercial	72		306	448	570	800	11.5
		EDF20	57		307		560	767-856	7.1
	Horse	Commercial	66	301	577	795			9.3
		EDF20	62	297	563	786			10.9

EDF20 succeeded in the processing of cow and horse hides. The new product was comparable to a commercial one, taken as reference. The pickled/pretanned hides had good touch, firmness and fullness of grain and they were suitable for either the vegetable or chrome based tanning. The FT-IR analysis confirmed the reduction of two main spectroscopic parameters: Area 1 and Area 2 peaks, associated to the presence of fat in the hides. The results were consistent amongst the samples, indicating a uniform distribution of residual fat within the specimens. The thermogravimetric analysis showed that pickled/tanned hides were less stable than raw hides, which needed to go through the tanning process for final stabilization into leather.

FT-IR analysis of cow hides



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