



# LIFE13 ENV/IT/000470 "ECODEATTING"

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



## Action B1

### Demonstration of natural products in the defatting phase at laboratory level

Beneficiary responsible for implementation: Inescop and Unifi

**Duration**  
01.10.2014 to 30.09.2016

**Total Budget**  
€ 1,035,556.00

**EU contribution**  
€ 517,778.00

A selection of different formulations containing naturally derived substances were tested, to degrease pickled sheep skin specimens. The defatting agents were prepared as aqueous compositions.

### Degreasing Formulations



### Work Procedure

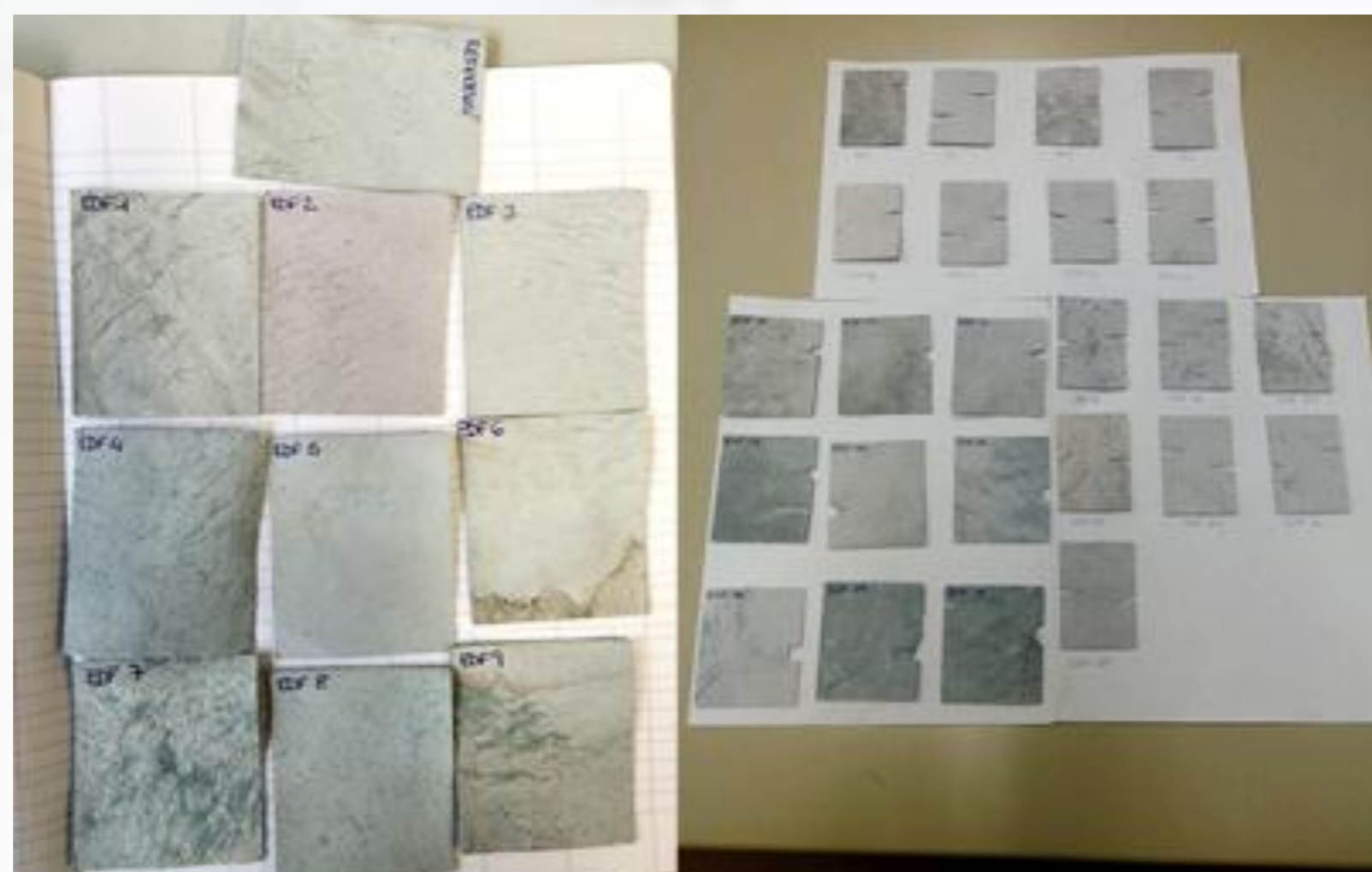
Stage	%	Product	°C	Rotation Time (min.)	pH	Remarks
De-pickling	1000%	water	20	30	6	8 °Be Check pH Drain
	10	Salt				
	3	NaHCO <sub>3</sub>				
Defatting	1000	water	35	15		8 °Be Drain
	10	Salt				
	1000	water	35	10		8 °Be
	10	Salt				
	5	Defatting agent	60		Drain	
	1000	water	35	15		8 °Be Drain
	10	Salt				
	1000	water	30	15		8 °Be Drain
	10	Salt				
	1000	water	25	15		8 °Be Drain
	10	Salt				
	Pickling, Tanning	600	water	20	10	2.8-3.0
10		Salt	30			
0,8		H <sub>2</sub> SO <sub>4</sub> 1:10	10			
0,8		HCO <sub>2</sub> H 1:5	60			
6		Cr salt	Ovn			
1,2		MgO	20			
0,1	Fungicide					

### Coordinating beneficiary



Chemical Department  
"Ugo Schiff"  
Florence University (IT)

### Degreased Samples



### Associated beneficiaries



Chemical Institute of organometallic compounds of CNR (IT)

### Inescop Premises

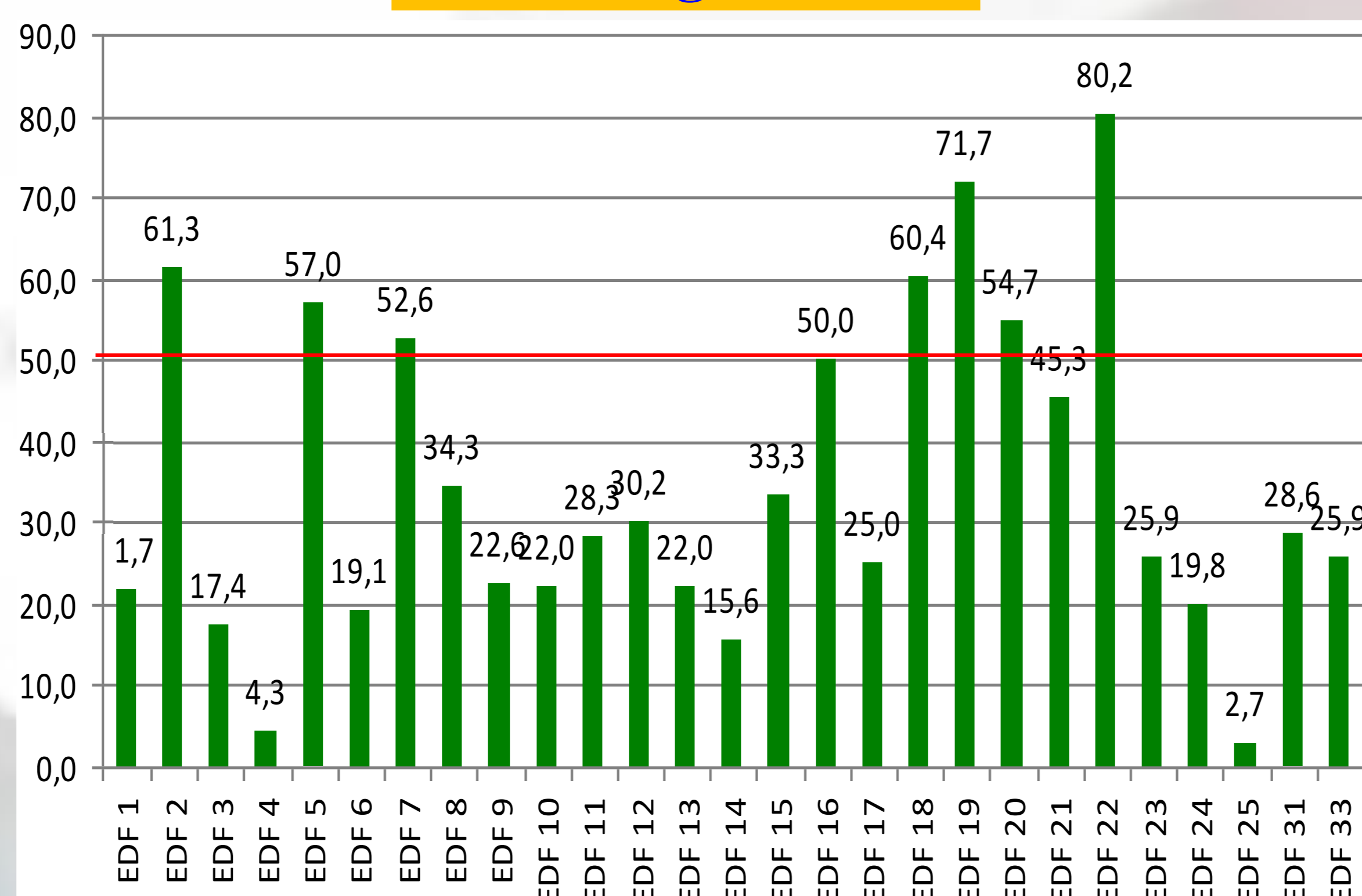


Newport Srl (IT)



Asociación de Investigación para la industria del calzado (ES)

### Defatting results.



### Physical tests

Sample	Thickness (mm)	Tear strenght (N)	Tensile strenght (N/mm <sup>2</sup> )	Elongation at break (%)
EDF 1	1.1	48.3	14.2	59
EDF 2	1.2	44.6	15.2	63
EDF 3	1.1	47.5	14.9	57
EDF 4	1.1	46.9	14.3	64
EDF 5	1.1	47.6	15.0	61
EDF 6	1.2	42.3	15.1	60
EDF 7	1.2	44.5	15.9	67
EDF 8	1.1	49.9	15.3	61
EDF 9	1.1	48.9	15.7	63
EDF 10	1.1	45.7	14.7	60
EDF 11	1.1	43.9	15.2	62
EDF 12	1.2	47.1	14.9	58
EDF 13	1.2	44.8	14.7	57
EDF 14	1.1	42.9	13.9	60
EDF 15	1.2	48.0	15.1	63
EDF 16	1.1	48.7	15.3	52
EDF 17	1.2	46.5	14.4	57
EDF 18	1.1	43.8	14.8	58
EDF 19	1.1	46.9	15.1	57
EDF 20	1.2	48.2	15.3	58
EDF 21	1.2	50.3	15.3	62
EDF 22	1.1	41.0	16.2	42
EDF 23	1.1	49.6	15.4	58
EDF 24	1.2	53.3	14.9	49
EDF 25	1.1	52.8	15.6	52
EDF 31	1.2	45.9	14.4	43
EDF 33	1.2	47.2	14.8	46

### Contacts

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Defatting agents with the capacity of removing more than 50% of fat in sheep skin specimens were chosen for further evaluation on pre and semi-industrial scale action. EDF-20 and EDF19 were selected according to defatting performance and quality of product, which had to be homogeneous.