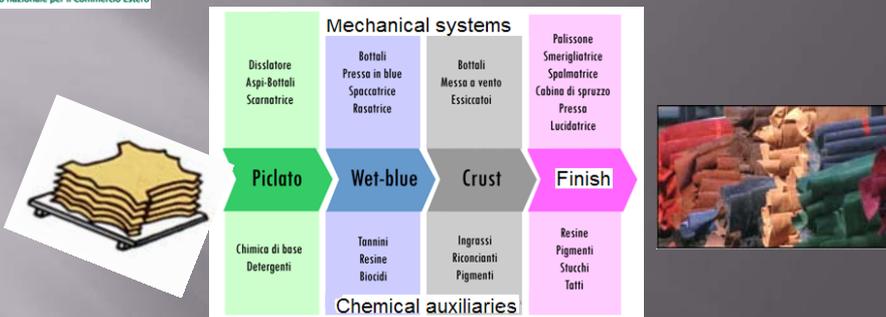




TECHNOLOGY SEMINAR and B2B MEETING DAMASCUS 26-07-2010



The skin is a natural product , consequently
"discontinuous and variable"



Every step is closely linked to the next

Combination of strategic factors

Organization and
Management

Tecnology and
Innovation

Application Competence



Leather Industrial Process

Every Leather can be tanned



Every tanned process is related to final application

Every leather is prepared for final article



No Magic Formula Available!"

BALANCE



Production Cost

Sales Cost



The Process Organization



CONSERVATION

RAWHIDE PREPARATION



Thermal Stress
? °C ?



BACTERIAL GROWTH



Statistical evaluations of defects :

60 % Bacterial aggression due to:

- DUNG (poor cleaning)
 - POOR PRESERVATION
- These two phenomena will vary considerably depending on the season and type of farm.

35 % Traumas due to:

- FLAYING -BRANDING
- THORNS -TRANSPORTATION

5 % Aggression by parasites:

- INSECTS -MOULDED
- DERMESTES -WARTS
- VERRUCAS



BACTERIAL GROWTH VELOCITY

fresh
First day



Day 3



Day 5



STOCK -HOUSE ORGANIZATION:

- Clean
- Aeration
- Raise

WET BLUE

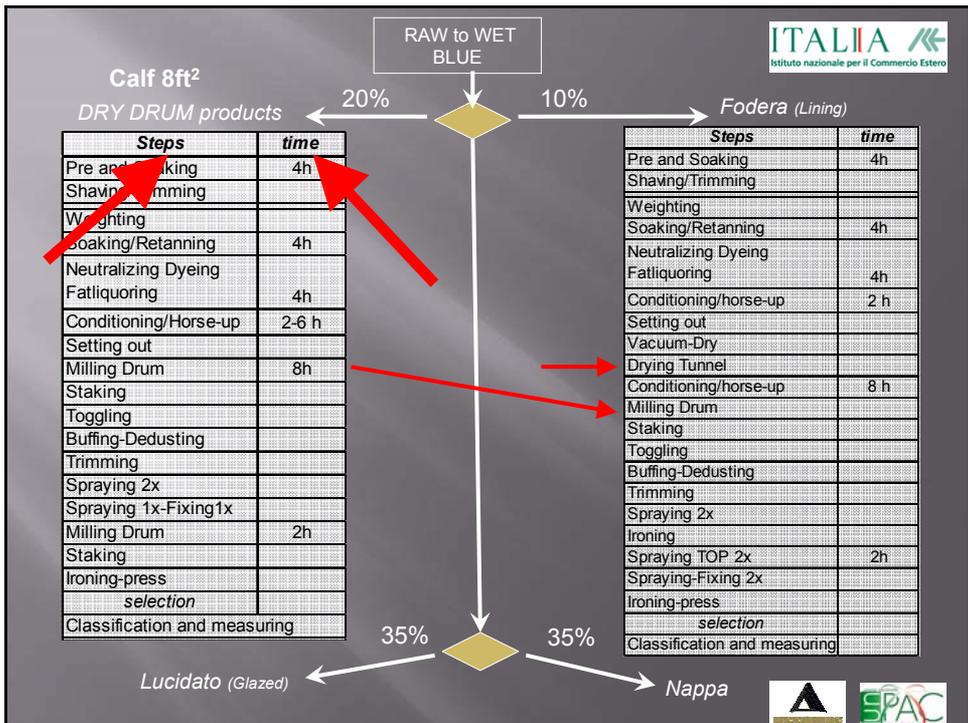
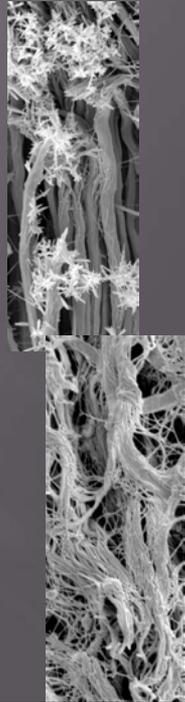


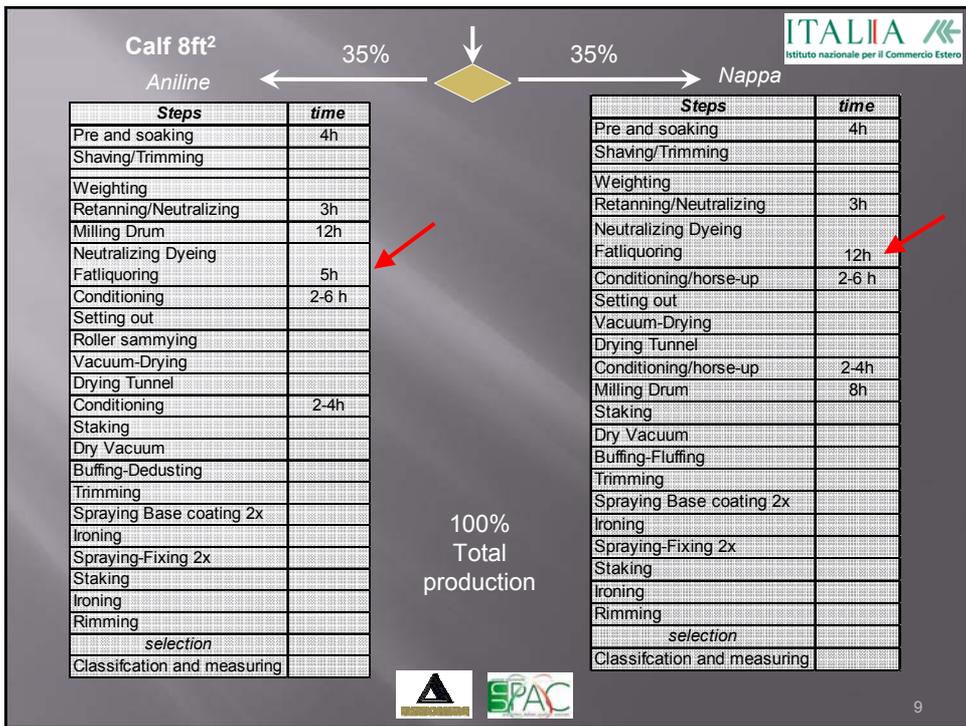


Tanning process is ...“puzzle di competenze”



- Specialization
- Investment
- Uman resource
- Sustainability





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The simple reasons to prepare right basic leather

??? FINAL PRODUCT ???






?Process step?

- Bacteria Attack?
- Degreasing?
- Bed Finishing?
- Press?

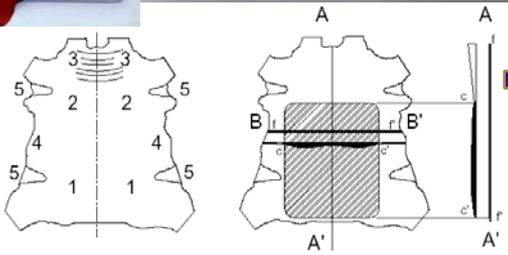
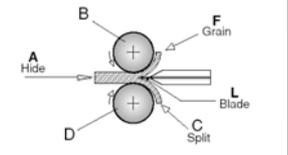
CUSTOMER OPINION



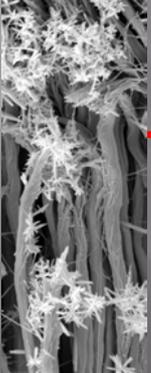
10

THICKNESS ROLE IN LEATHER PROCESS

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PROFITABILITY %sq ft
VALORISATION of By-products (crust)



Direct Correlation:
Temperature
Humidity retention
Porosity



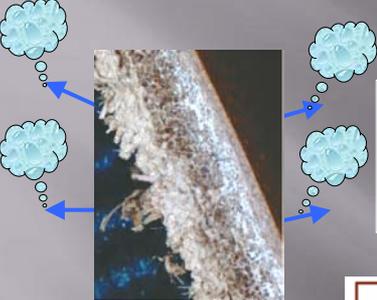
STABILIZATION




11

DRY and STABILIZATION

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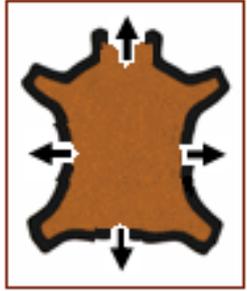


EVAPORATION RATE:

- THICKNESS
- FACE-FRONT
- ENVIRONMENT CONDITION



- Production yield
- Energy consup.



Superficial (ft²):

- Tanning Stability
- Finishing Uniformity




12

L'alta tecnologia italiana
per la lavorazione
della pelle

TECHNOLOGICAL ISSUES



TECNOLOGICI
L'alta tecnologia italiana per la lavorazione della pelle ha fatto di tutto il mondo di raggiungere traguardi e fatto di questo e di efficienza produttiva, presenta una sintesi delle tecnologie più messe a punto fino ad oggi dalle aziende italiane.

- 2.1. TECHNOLOGIES FROM RAW HIDES TO PICKEL
- 2.2. TECHNOLOGIES FROM PICKEL TO WET-BLUE
- 2.3. TECHNOLOGIES FROM WET-BLUE TO CRUST
- 2.4. TECHNOLOGIES FROM CRUST TO FINISHED
- 2.5. PROCESS AUTOMATION AND HANDLING
- 2.6. ENVIRONMENTAL SOSTENIBILITY



Evolution in Leather production

Yesterday



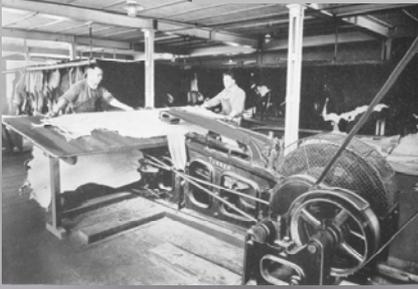
Over than 50 years of technology innovation

Today



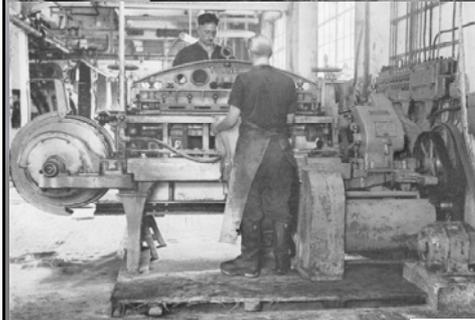
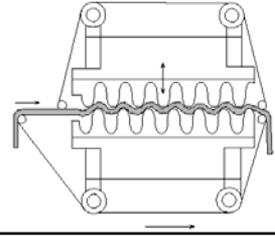
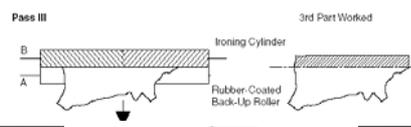
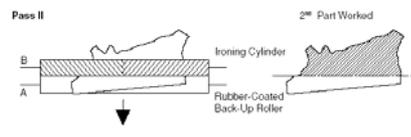
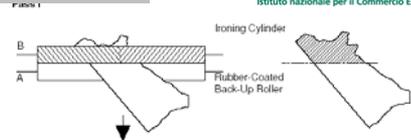
Evolution in Leather production

Yesterday

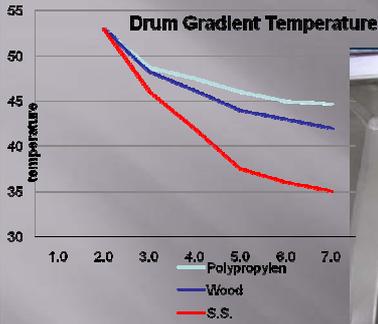


Over than 50 years of technology innovation

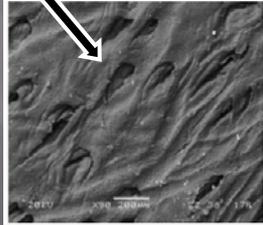
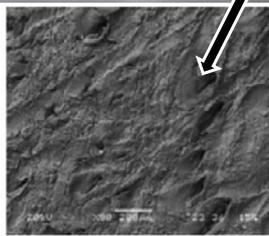
Today



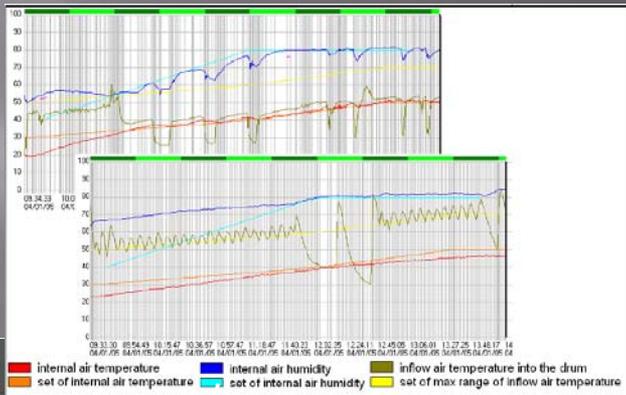
UP-DATE TECHNOLOGY



MICROSCOPY Image of grain leather, comparison between old wood drum and modern drum wood - s.s.- ptf



DRY-MILLING DRUM



Reproducible working condition:

- Humidity
- Dosage
- Temperature

FINISCHING COMPOUND

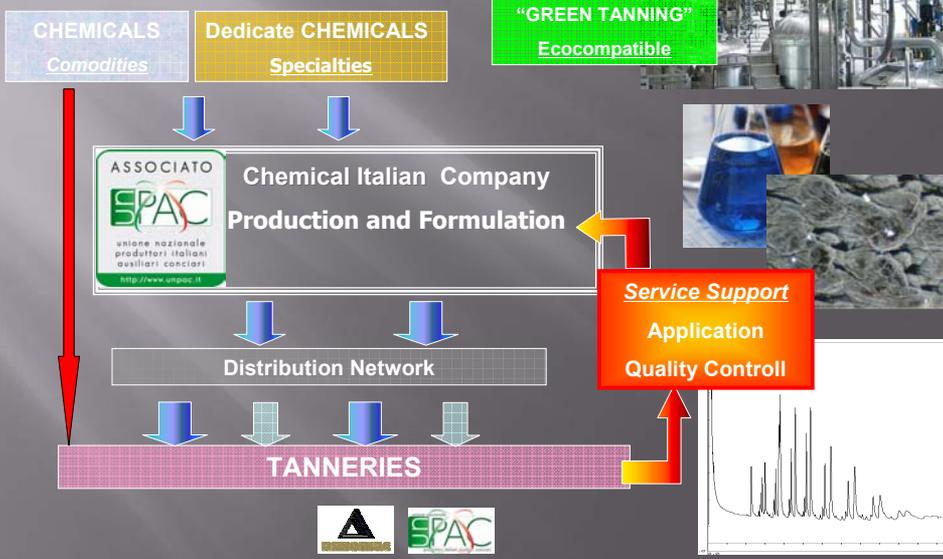


List of Components

- | | | |
|-------------------------------|---|---|
| Wax and/or oil emulsions |  | carnauba, polyethylene wax emulsion, natural and/or mineral oil/wax emulsion |
| Matting agents |  | silica and/or caoline dispersion |
| Synthetic polymers |  | acrylic, butadienic, polyurethanic, vinilic |
| Natural binder |  | casein |
| Nitrocellulose water emulsion |  | |
| Feeling agent |  | silicon polymers or waxes (esters, amides...) |
| Pigment paste dispersions |  | organic or inorganic pigments, wetting and dispersing agents, thickeners, extenders |
| Refinishing dyes |  | aniline without inorganic salts residue |
| Solvents |  | butylglicol, DPM, PM, MPA |
| Crosslinkers |  | Polyisocyanate, polyaziridine, polyurea, imides |
| Other |  | |

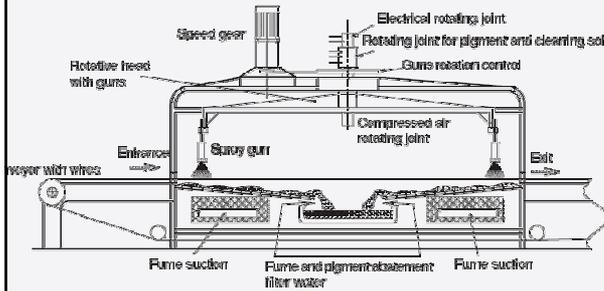
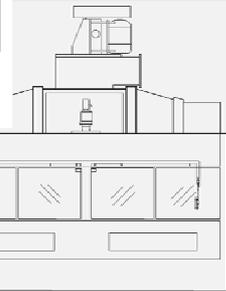
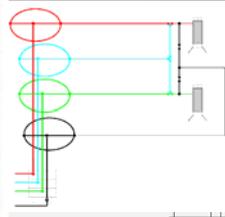


SPECIALIZATION





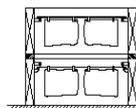
Cabina di verniciatura a spruzzo



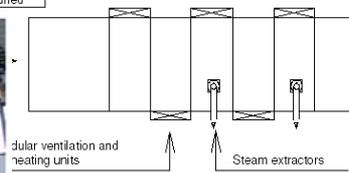
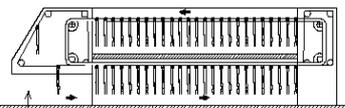
-Omogeneous Consumption
- VOC Reduction



DRY TUNNEL (leather equilibration)

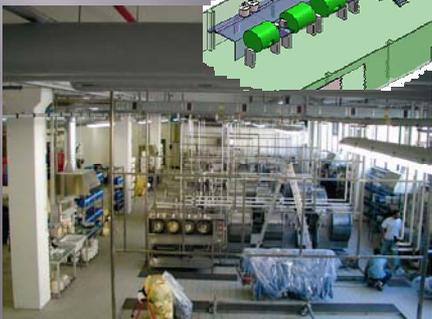


Discharge head of dried hides and loading head of hides to be dried

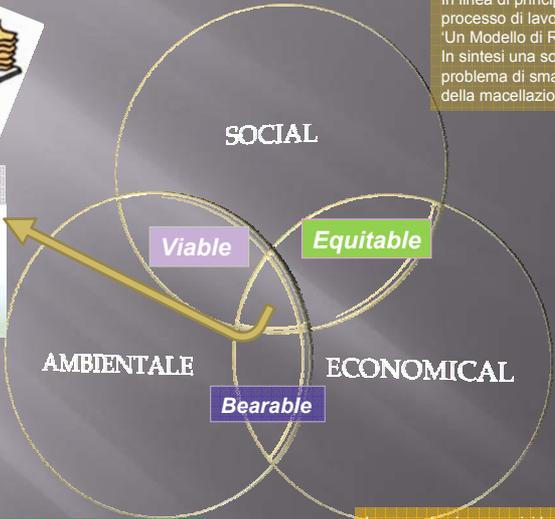
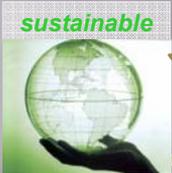
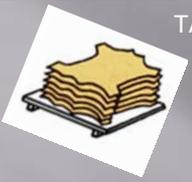


Automation

- Control *traceability*
- Managing *cost calculation*
- Repeatability *technical specification*



TANNING PROCESS



In linea di principio possiamo identificare il processo di lavorazione della pelle come 'Un Modello di Riciclo e Valorizzazione'. In sintesi una soluzione sostenibile al problema di smaltimento di un sottoprodotto della macellazione.



Sostenibilità della produzione pelle e cuoio può essere sicuramente ulteriormente sviluppata. Migliorando lo sfruttamento delle risorse (acqua, combustibili fossili e di altre risorse naturali) ed incentivando l'uso delle risorse rinnovabili.

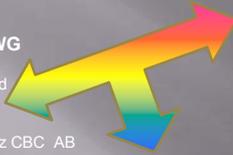


I meccanismi economici legati alla 'globalizzazione' impongono settore delle pelli un necessario aggiornamento ed adeguamento tenendo maggiormente conto di fattori aggiuntivi oggi determinanti come:- la reperibilità delle materie prime - la sostenibilità dei processi - la movimentazione dei materiali.



Brands involved in LWG

- adidas-group
- Airwair International Ltd
- Burberry
- Clarks International
- H&M Hennes & Mauritz CBC AB
- Ikea of Sweden
- K-Swiss International
- Marks & Spencer Plc
- Natuzzi SpA (hide project)
- New Balance Athletic Shoe, Inc.
- Nike, Inc
- Nine West Group
- Pentland Group plc
- Puma AG
- The North Face
- The Timberland Company
- Wolverine World Wide Inc.



QUALITY is Based
Leather specification
but also
Quality of production

Some Negative Perceptions of Leather

- Polluting process
- Toxic substances
- Primitive techniques

LWG Key items in the audit (Management of restricted substances):

- Traceability of material
- Emergency planning
- Operating permits
- Energy consumption
- Air emissions
- Waste management (haz/non)
- Environmental management systems
- Water consumption
- Control of manufacturing processes
- Effluent treatment
- Chrome management



REDUCTION on WATER DEMAND

Some study indicates that the quantity of water used for leather processing can be reduced

from 40-50m³ 1/ton to 12-30 m³ 1/ton

RECYCLING in WET PHASE

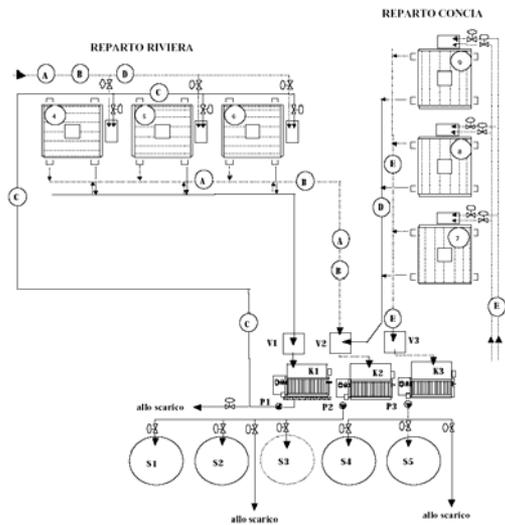
Green Hides
Liming
Pre-Deliming
Pre-Deliming Washing
Deliming/Bating
1st Bating Washing
2th Bating Washing
Tanning
Wet Blue

(pub. IDC Leder&Haute Markt 12-2007)
The implementation was realized in drum:
Step A in pilot plant scale (with half-hides)
Step B in industrial scale (4200kg of hides)



EXAMPLE OF A RECYCLING /RECOVERY SYSTEM

FIGURA 1





□ Crome Reduction

IN TANNERY

approach through the process control

Improve Cr fixation:

- Offered Cr (in Cr2O3)
- Length of the bath
- Final temperature of tanning
- Duration of tanning
- pH end tanning
- masking.

Total volume of Cr-effluents (m3/day)	80
Mean Cr III content (1) (g/L as Cr2O3)	3.25
Max. recoverable chrome (kg Cr2O3/year)	65,000
Plant working hours (2)	16 (one shift per day)
Efficiency of recovery %	99 ca.
Residual Cr III in the filtration waters (mg/L as Cr)	5-10

TANNERY DISTRIC

Crome recovery The plants guarantee:

1. total recovery of the discharged chrome , with obvious environmental advantages
2. complete reliability of the quality of the recovered product, which allows the reuse of the tanning liquor without affecting the process and the final product
3. significant economic benefits , due to relevant reduction of the consumption of virgin chrome, to the lower costs for water treatment (due to the absence of chrome in water and sludge) and to low costs of installation and management of the plant.

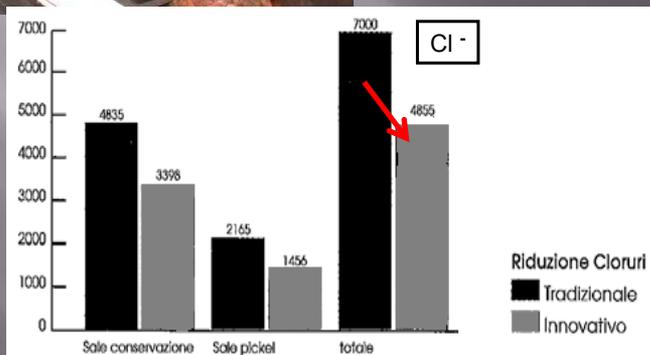


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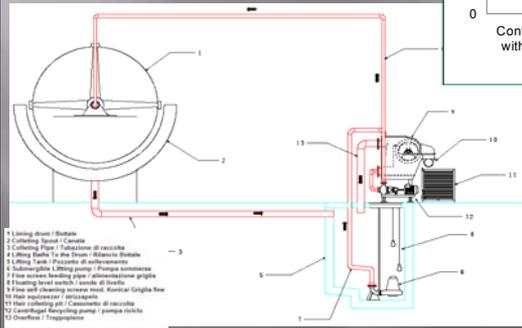
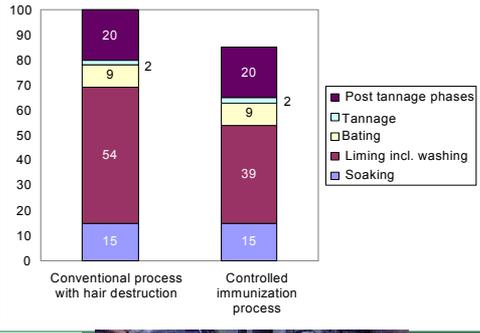
□ DRY DESALTING

70% Cl⁻ in waste water is from conservation salt



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HAIR RECOVERY COD 15% reduction



Reusing of leather water treatment sludge for agricultural fertilizer

“FERTILAND”

1.8 Mobilization and plant uptake of chromium after application of tannery sludge derived fertilizers: 2-year trials in north Italy, Gatti M., Baffi C., Silva S. (2007)

GIUDIZIO SULL'APPLICABILITÀ DEI FANGHI CONCIARI IN AGRICOLTURA SULLA BASE DEI RISULTATI DELLA SPERIMENTAZIONE	mais	frumento	riso
Assenza di traslocazione di inquinanti nelle colture	😊	😊	😊
Assenza di lisciviazione di inquinanti nella falda	-	-	😊
Immobilizzazione degli inquinanti nel suolo	😞	😞	😞

Descrizione della sperimentazione

Lo studio si riferisce ai risultati di una sperimentazione **biennale** relativa all'impiego di un concime organo-minerale contenente NP in forma minerale e N in forma organica, quest'ultimo derivante dal compostaggio di fanghi di depurazione e scarti delle pelli conciate. Le prove sono state condotte mettendo a confronto 3 distinte tesi: una tesi con concimazione esclusivamente minerale NP, una tesi relativa all'applicazione del suddetto concime organo-minerale ottenuto da fanghi e scarti conciarci, infine una tesi testimone. Il protocollo sperimentale ha previsto l'allestimento di prove sia di **pieno campo** (sulle colture di **mais, frumento, riso**) che **lisimetriche (riso)**.

Obiettivi della sperimentazione

La sperimentazione si propone di indagare gli aspetti ambientali connessi all'applicazione di un concime organo-minerale ottenuto da fanghi di depurazione e scarti delle pelli conciate a colture cerealicole quali mais, frumento e riso.



HUMAN RESOURCE



news professional figures

A - Tanning

B - Implant

C - Laboratory

D - Environmet



an association founded by Italian companies strong and flexible in responding to the needs of customers and professionals, prepared to safeguard the interests of its competence.



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APPLICATION
LABORATORY
WET PHASE

ADVANTAGE :
Optimization process
New Methodology
Waste Control

Della concia al cromo

Application Finishing Laboratory

Advantage:
Article Preparation
Process Definition
Control of Finishing
Data Base

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ASSOMAC SPAC

33

ASSOMAC

Nata nel 1982, è l'Associazione confindustriale che rappresenta i costruttori di macchine e sistemi per tutti i settori dell'area pelle: macchine, tecnologie per calzatura, pelletteria e prodotti ausiliari per la conceria. La tecnologia italiana ha acquisito la leadership mondiale grazie ad un costante lavoro di ricerca e di innovazione che ha favorito la realizzazione di macchine e sistemi adatti ad ogni tipo di lavorazione, sempre rispettando la compatibilità ambientale, la flessibilità, l'affidabilità e la sicurezza.

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National Association of Italian Manufacturers of Footwear, Leathergoods, Tannery Machines and Accessories

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Press & Publications

Laws

Services

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04	05	06	07	08	09	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Tue, Jan 27 - Fri, Jan 30
Leather & Shoes

Welcome in Assomac

Assomac is the association that represents the Italian manufacturers of machines for footwear, leather and tannery industries. Companies adhering to ASSOMAC are leaders worldwide.

COMPANIES
For people who know the company name of reference, detailed information sheets of associated companies.

COMMODITY INDEX
For people looking for specific types of equipments and applications. The ideal starting point for research.

REQUESTS
For people who need information about machines or manufacturing processes.

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An wide library of the sector, years of experience translated into high-value technological publications.

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Commodity index > Tannery machines

Tannery machines

- A01 - SOAKING AND TANNAGE (from raw hide to wet-blue)
- A02 - DYEING AND DRYING (from wet-blue to crust)
- A03 - FINISHING MACHINES (from crust to finished hide)
- A04 - AUTOMATION AND MOVEMENT
- A05 - SOLE HIDE VEGETABLE TANNAGE SPECIFIC MACHINES
- A06 - SPECIFIC MACHINES FOR THE MANUFACTURE OF LEATHER WITH HAIR
- A07 - PURIFICATION AND REGENERATING PLANTS
- A08 - LABORATORY MACHINES
- A09 - CONSUMABLE MATERIAL - ACCESSORIES - OTHER

Commodity index > Tannery machines

PRODUCTS
SERVICE



Chemical for Tannery Dedicate and Customized



UNIONE
NAZIONALE
PRODUTTORI ITALIANI
AUSILIARI
CONCIARI

Direct company link:
PRODUCTION and SERVICE

"Shared Ground" for the Italian chemical-tanning product industry

UNPAC "Shared Ground" for the Italian chemical-tanning product industry

an association founded by its members, companies strong and flexible in responding to the needs of customers and prepared to safeguard the interests of its competence.

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CENTRALKIMICA

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Consolidating its role as the spokesperson in its field; especially in relation to the tanning industry; in particular established ongoing relationships with the other relevant public and private institutions at national and international level.



ITALY-Bologna 2009

