

Leather Powered by Probiotics



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Provia Biotech is an SCD Probiotics affiliate specializing in the global tannery market with sustainable environmental solutions.

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Background

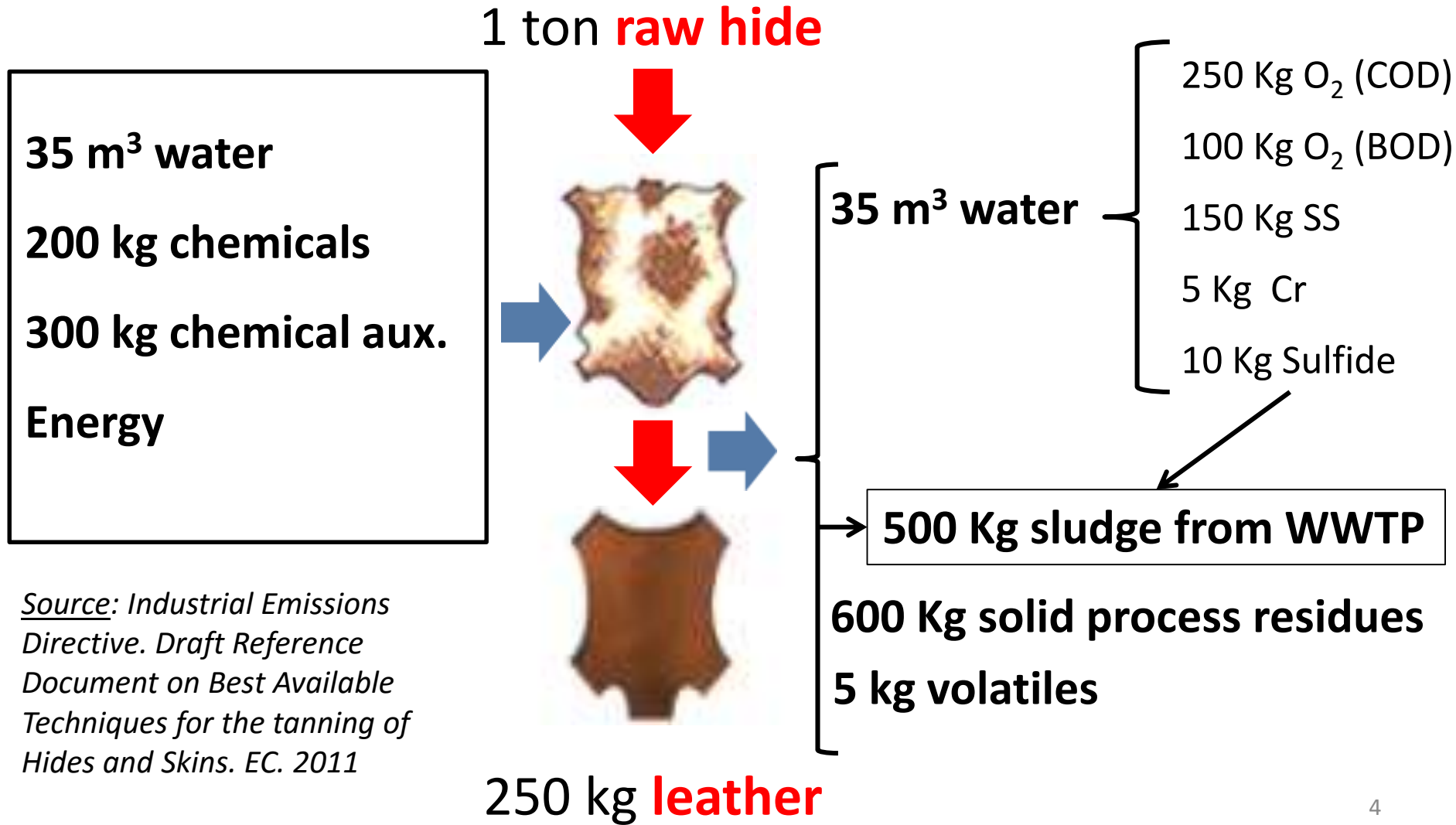
Leather is:

- A **natural, renewable** material used to manufacture consumer goods:
 - Shoe
 - Garment
 - Upholstery
 - Car & aircraft interiors
 - Accessories (handbags, belts, purses, saddle...)
 - A **byproduct** from meat industry

Defining leather-goods factors:

- **Natural & Quality**
- **Prestige & Luxury**
- **Fashion & Design**
- **Resistance & Durability**

Background



Source: Industrial Emissions Directive. Draft Reference Document on Best Available Techniques for the tanning of Hides and Skins. EC. 2011

Facts:

- Only **20%** of hides & skins are **suitable** to be converted into leather:
 - Waste valuable for other industries (gelatin, cosmetics, pet toys...) → need to be clean
 - Go to effluents → need to be treated
- High amounts of **chemicals** → fulfill regulations on working conditions (e.g. safety equipment):
 - Processing chemicals → substances that remain in leather articles → fulfill regulations for consumer safety (e.g. REACH). Must be fully exhausted.
 - **Auxiliary** chemicals → discharged to effluents

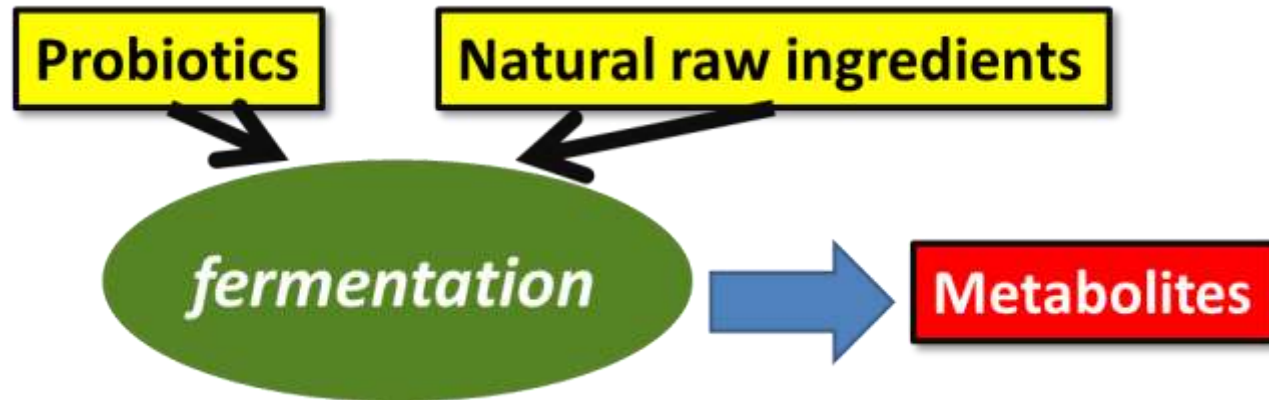
Technical Fundamentals

Based on **probiotic technology**:



A natural technology with beneficial, healthy, and effective live microorganisms.

Technical Fundamentals



- Proviaera leather biochemicals are metabolites derived from a proprietary fermentation and formulation technology using probiotic cultures and natural raw ingredients.
- The products are not enzyme-based.

Technical Fundamentals



Chemical synthesis

- **Traditional**
- Carbon footprint; greenhouse effect
- Regulations (REACH)
- Dependence from crude oil industry
- Single chemical substances

Biochemicals from probiotics

- **Innovative**
- 100% natural and biodegradable
- Non-toxic; non-corrosive; non-hazardous
- Biochemical consortia

Product Properties

- Biochemical consortia ➤ Effective at low concentration
- Hydrotropic properties ➤ Soaking agents replacing surfactants and enzymes
- Surfactant-like properties ➤ Dispersing and degreasing agents replacing solvents and surfactants
- Small molecule size ➤ Penetration and dispersion among inner leather fibers
- Bacteria growing control ➤ Replacing soaking bactericides and elimination of bad odors

Value Proposition

- **On the leather quality:**

- Crust evenness: color, fullness. Shade brilliance. Better surface cleanness
- Fewer growth and drawn marks
- Compatible and flexible application with all tanning systems, chemicals, especially for waterproofing leather articles

- **On the environment:**

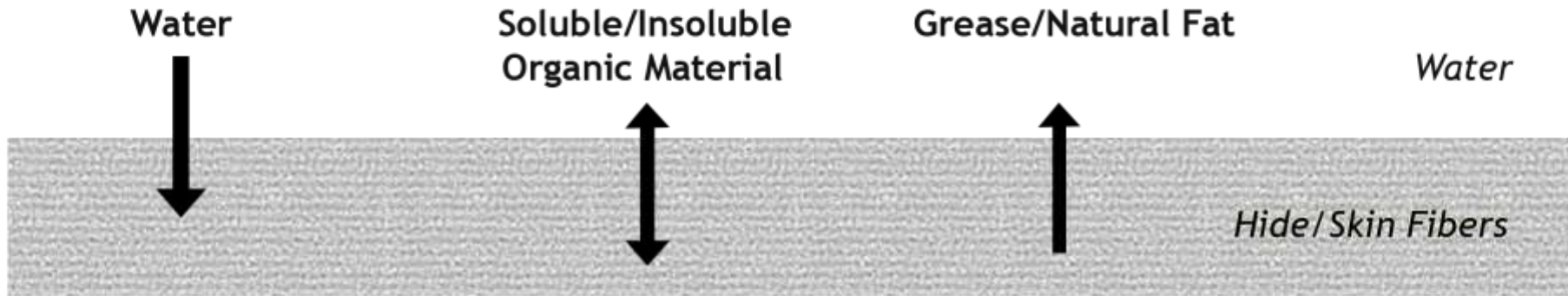
- Better fixing and exhaustion of processing chemicals
- Reduced need of chemical consumption → lower carbon footprint, fewer greenhouse emissions.
- Lower effluent loads (COD, total and ammonia nitrogen, toxicity...)
- No VOC and no hazardous concerning substances

Value Proposition

- **On the profits:**
 - Increase area yield
 - Improvement of grading rates
 - Reduction of soaking time
 - Reduction of production costs

Proviera Biotech aims to reduce the need of using auxiliary and processing chemicals while improving leather quality and tannery profits through natural innovation for natural leather, a smaller environmental footprint, and production processes and leather articles that are safe for workers and consumers.

Product Range



Wetting: ProSoak™

Helps diffusion of water inside the fiber structure of hides, skins, and enhances solubility of water soluble matter.

Main soak, wetting back crust leather, washing wet-blue or wet-white.

Dispersing: ProSpread™

Soluble and insoluble organic matter is removed and dispersed in the float.

Pre-soak, main soak, wetting back crust leather, dispersing agent for dyes and fatliquors.

Degreasing: ProDegreaze™

Fat is removed, dispersed and solubilized from hides and skins and released to the float.

Pre-soak, deliming, degreasing.

Product Range



- Hydrates hides and skins at any stage of the leather process.
- Improves wetting back crust leather without the need of surfactants and ammonia
- Helps to reduce processing time
- Increases the performance of the unhairing and liming auxiliaries
- Eliminates the need for bactericides in soaking

Product Range



- Natural dispersing agent used in the beamhouse operations to remove undesirable and non leather-making substances (manure, blood, dirt, unstructured proteins)
- Used in wet-end operations for better dispersion of retanning agents, dyes, and fatliquors, resulting in a uniform temper and improved color evenness.

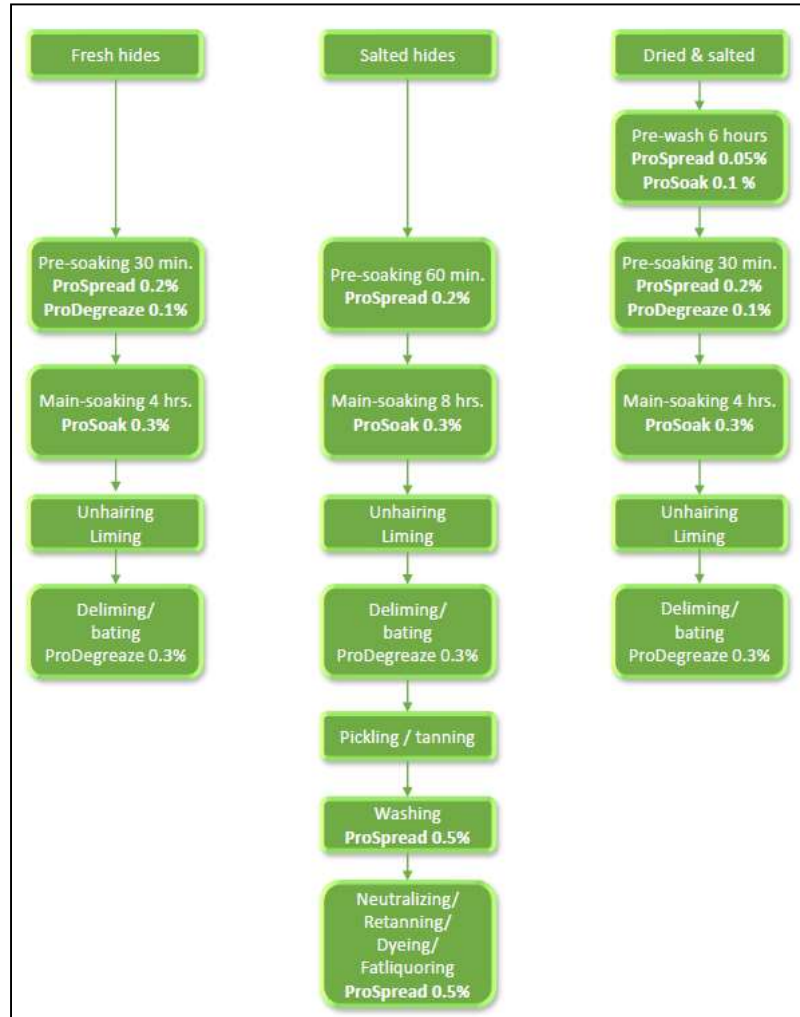
Product Range



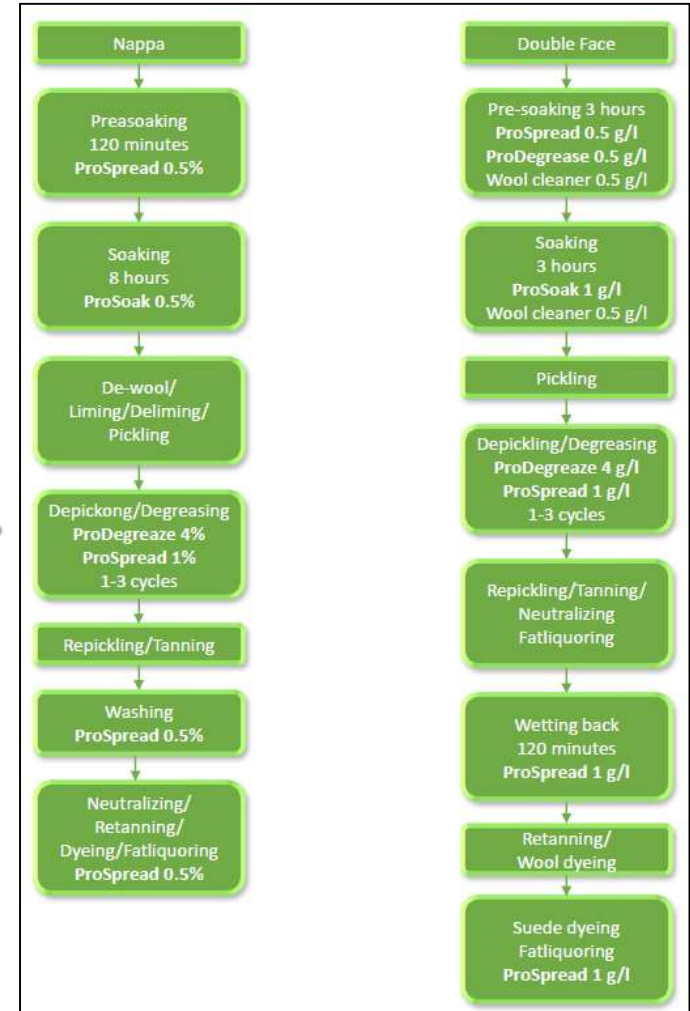
- Degreasing agent used in beamhouse and fellmongering operations to release natural fats
- Used in wet-end operations to achieve a more uniform uptake of retanning agents, dyes, and fatliquors
- Highly effective at removing and dispersing natural grease
- Has positive influence on the layout of leather
- Significantly reduces effluent load and it is APEO-free

Leather Process Application

Bovine hides



Sheepskins



Please note that these application rates are provided as a reference only and may not be suitable for all customers. Please contact Proviaera Biotech to obtain a more detailed application protocol.

Leather powered by probiotics means:

- Use of auxiliaries based on a blend of biochemicals derived from a controlled fermentation process using probiotic cultures and selected natural raw ingredients
- Replacement of traditional leather-processing chemicals
- Non enzyme-based technology providing innovative solutions to reduce effluent load while improving leather quality and area yield
- 100 % biodegradable and natural
- Effective across a wide ranges of conditions during the leather making process
- Application is tailored to each tannery's unique process and protocols

All Natural



The data above are based on our current knowledge, experience, and tests conducted. Since results may vary based on local procedures and conditions, we recommend that customers verify product performance conducting their own test.