

QUALUS



Sustainability Without Compromise

*Opportunities and Challenges for a More Sustainable
Method of Retanning Leather*

Presentation for Sustainable Leather Foundation – 19th January 2021

Contents

1. Benefits of Qualus – Sustainability Without Compromise

2. Managing Sferes in Production Environment

3. Challenges of Adoption by the Industry

The Problem – Sustainability often comes at too high a price

Tanners (leather producers) face pressure to lower their environmental footprint, but lack the ability to do so without losing competitiveness

Growing Demands to Lower Environmental Footprint



Regulators
Brands
Consumers

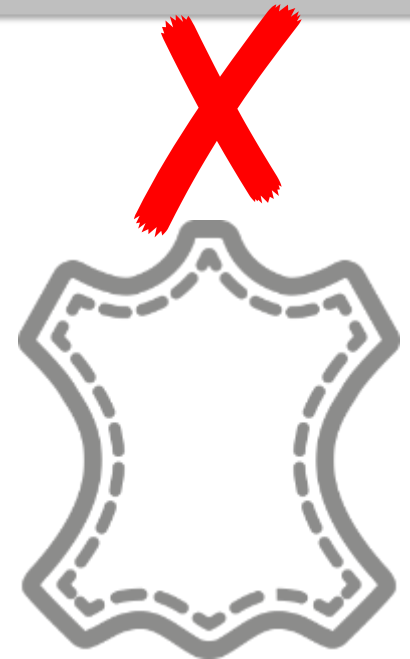


Increased Production Costs



And
/
Or

Lower Product Quality



Our Solution – Supports Sustainable Development Goals

Qualus' patented system enables brands and tanners to support four SDGs

SDG 13: Climate Action

20% to 30% lower carbon footprint through reduction in:

- Effluent treatment
- Chemical manufacture
- Transport of chemicals and water

SDG 12: Responsible Consumption and Production

- Qualus' product is reusable and recyclable
- Leather production upcycles a waste product

SDG 6: Clean Water and Sanitation

- 30% to 40% reduction of water in tanning, retanning & dyeing

SDG 9: Industry, Innovation and Infrastructure

- 10% to 15% reduction of chemicals in tanning, retanning & dyeing
- Enabling new chemical formulations



How It Works – Replace water with Sferes

Sferes (small polymer spheroids) partially replace water as the delivery mechanism for chemicals



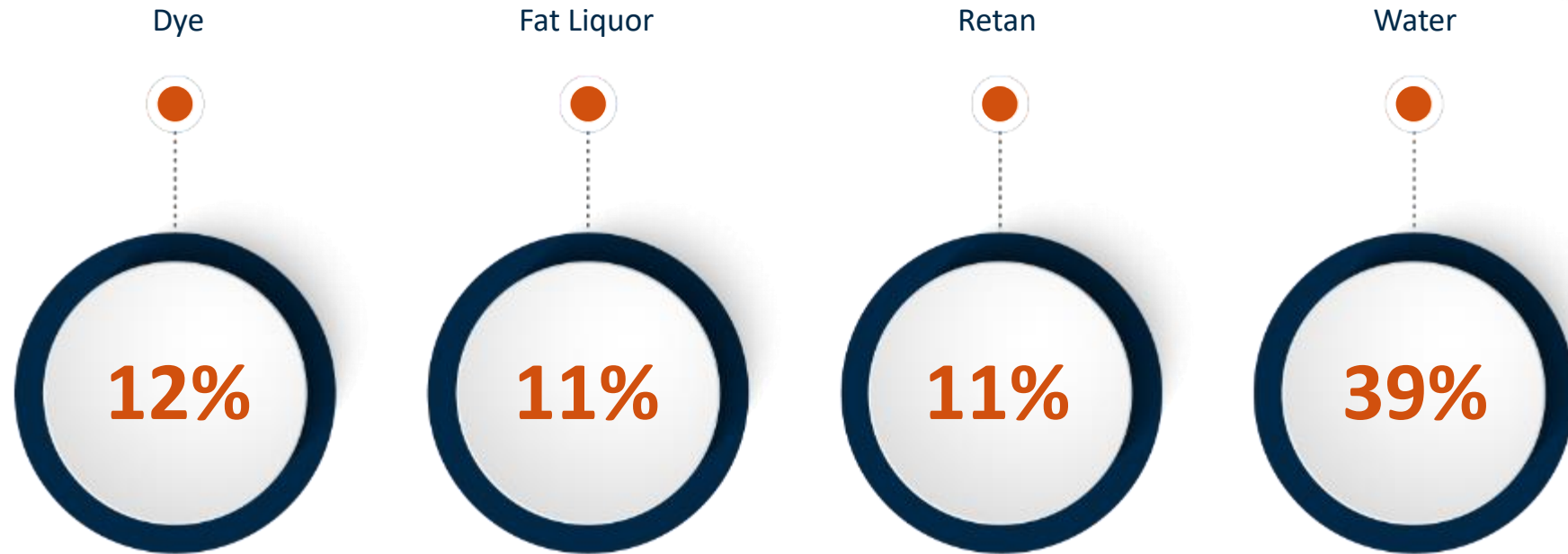
Sferes are approximately 7mm in diameter

Benefits of Using Sferes

- **Efficient** – Sferes drive chemicals deeper and more uniformly into the hide, resulting in a more consistent product while using less quantities of chemicals
- **Inert** – Works with all chemical formulations without requiring tanneries to change their formulas
- **Reusable** – Unlike water which is flushed down the drain after each cycle, Sferes can be reused for hundreds of cycles
- **Recyclable** – At end of life used Sferes can be recycled into new Sferes or commonly used consumer products

Water & Chemical Savings – Automotive (Bovine)

Average reductions across 43 trial runs with tanneries in Europe and North America

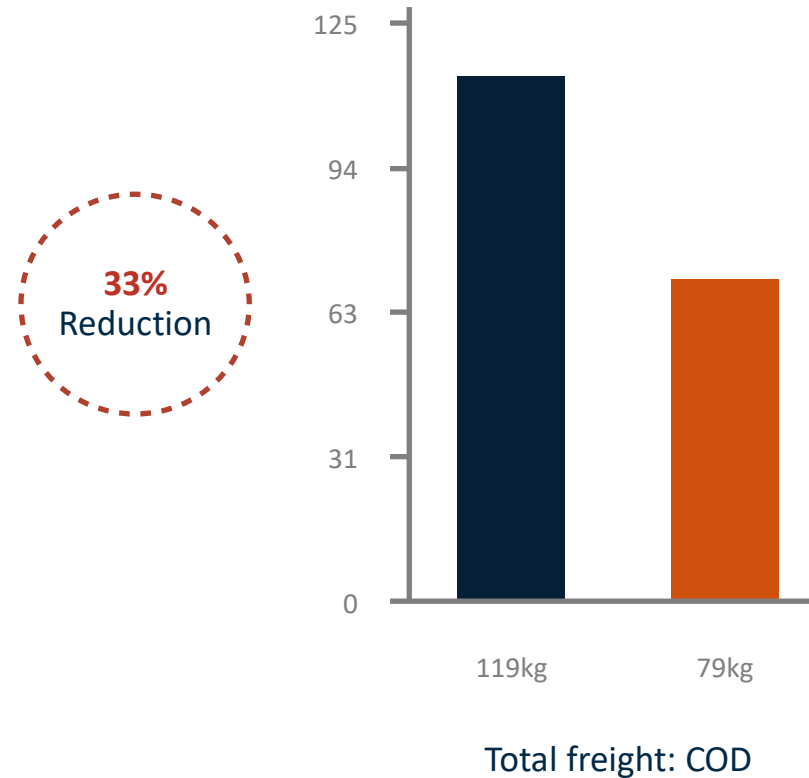
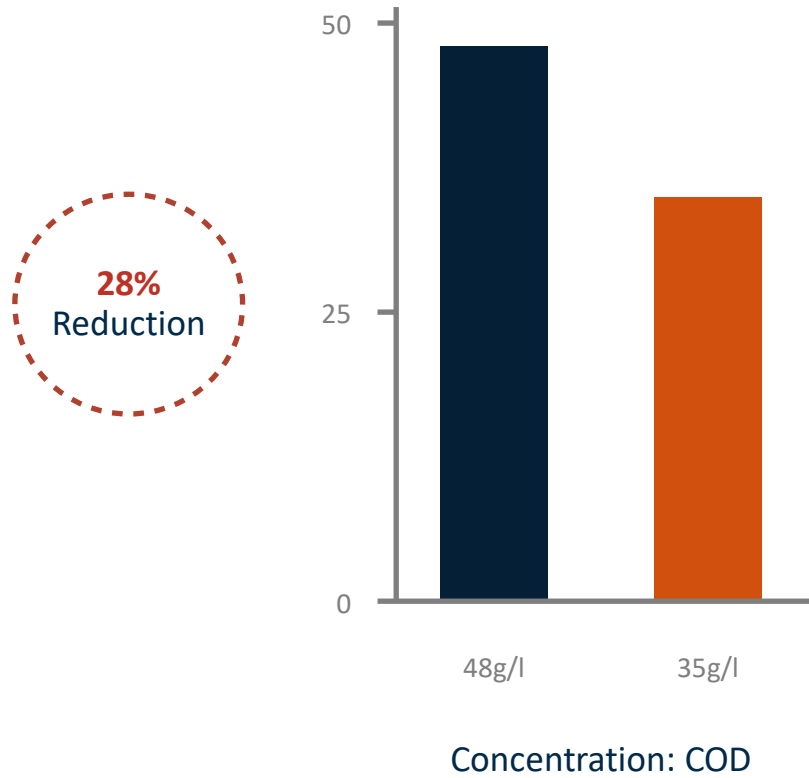


Applications Include:

- Steering wheel
- Seating
- Dashboard

Lower Environmental Impact – Automotive (Bovine)

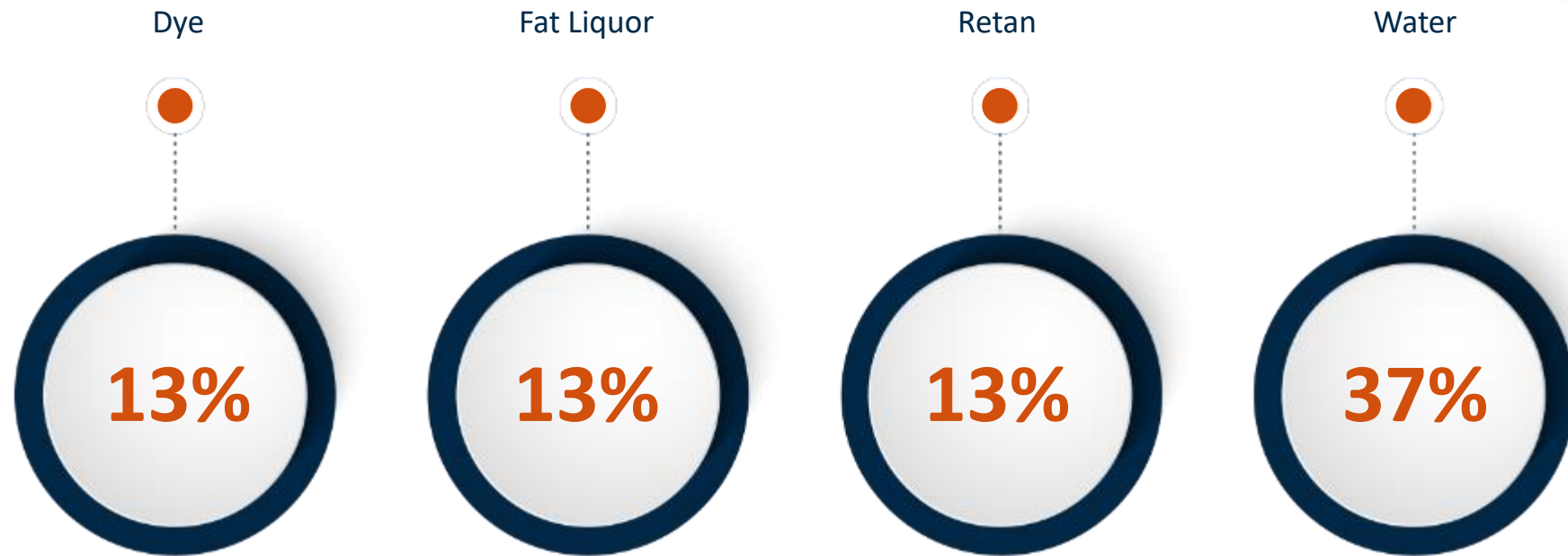
Automotive: Europe retanning example



Control Qualus

Water & Chemical Savings – Shoe/Luxury Goods (Bovine only)

Average reductions across 52 trial runs with tanneries in Europe and North America

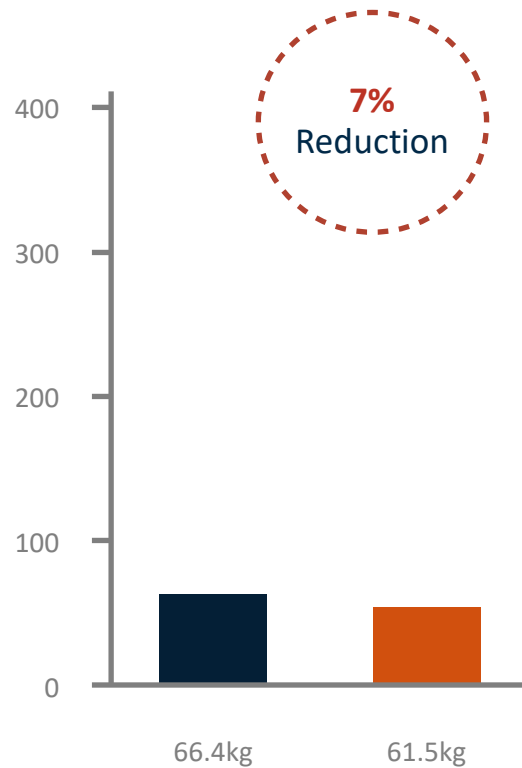


Applications Include:

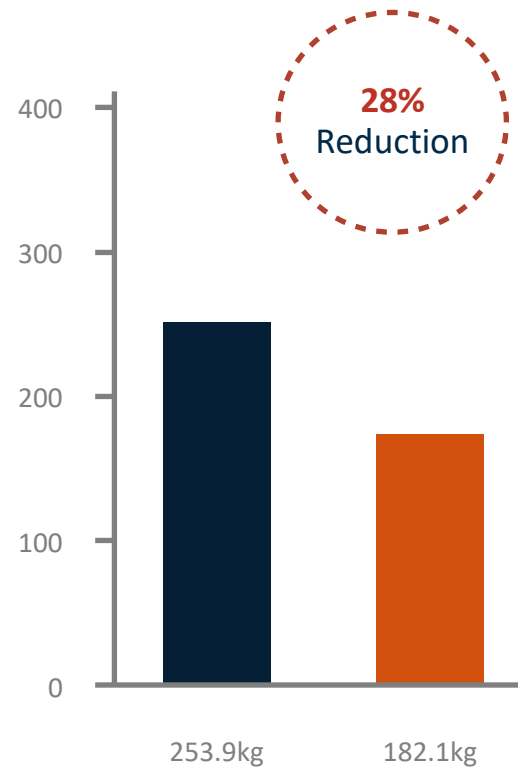
- Waterproof
- Heavy substance shoe leather
 - Smooth grain upper
 - Pebble grain upper
- Nubuck

Lower Environmental Impact – Shoe/Luxury Goods (Bovine only)

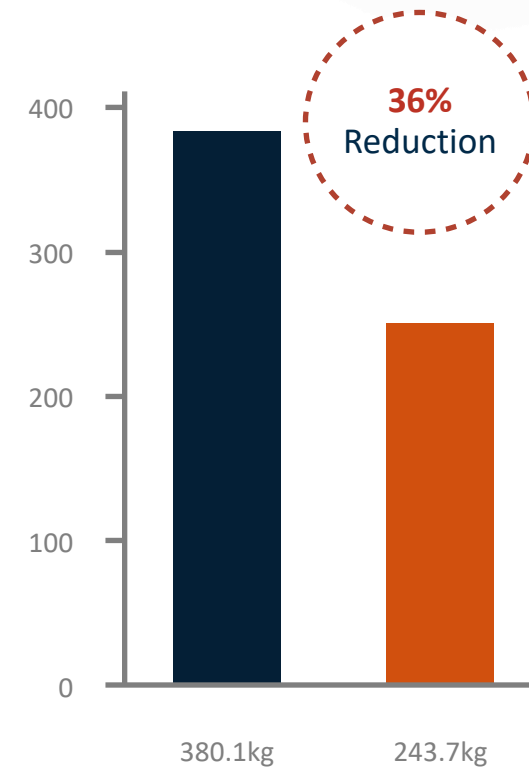
Shoe: Europe retanning example (total freight of COD)



Recipe A



Recipe B



Recipe C

Control Qualus

Commercial Traction – Successful trials with 20 tanneries

Tanneries which have already confirmed value of Qualus' system constitute the priority business development pipeline through 2021

"We want to be the first to have the Qualus system"

Managing director of shoe tannery, Mexico

"We were positively surprised. Other companies promise water and chemicals savings but the leather is never good enough. In your case, the leather is also good."

COO of leading automotive tannery, Europe

"There was no difference between Qualus and the control leather. So we shipped it already to production."

Designer for leading Italian luxury goods brand.

"Qualus' leather is better than the control"

Quality Control Manager for contract tannery, Italy

"With the constraints on water, Qualus have created the technology that must be adopted by the industry"

Managing director of automotive tannery, Mexico

"Qualus leather is too good for Gucci"

Head of Production of luxury goods tannery, Germany



Customer review of Qualus leather vs. production standard
Arzignano, Italy - Mar 2019

Our Solution – Sustainability without compromise

Qualus' patented system enables tanners to reduce their environmental footprint while also improving product quality and increasing profits

Lower Environmental Footprint



Economically Attractive



40% to 90% net profit increase
12-month payback

Improved Product Quality



More uniform
Better aesthetics
Improved technical properties

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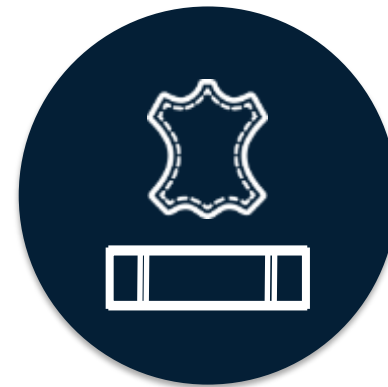
3. Challenges of Adoption by the Industry

How It Works – Sferre Management System (SMS)

Qualus' SMS provides a simple, low-cost, and effective method for storing, transporting, and containing Sferres in a tannery

Five Modules of the Sferre Management System

- 1. Storing** – Sferres are stored in a silo that is sized based on the production volumes of the tannery
- 2. Dosing** – The required quantity of Sferres are loaded into a “hopper” and dosed into the drum with a forklift
- 3. Containing** – The drum’s drain ports are modified to ensure that Sferres remain in the drum during processing
- 4. Separating** – A simple mechanism separates the hides from Sferres at the end of each drum cycle
- 5. Cleaning** – After each cycle, Sferres are cleaned and put back into storage, ready for use for the next cycle



Sfere Management System in Action

LEFARC video as posted on its LinkedIn and Facebook pages in mid-July 2020

(https://www.linkedin.com/posts/lefarc_the-most-sustainable-tannery-in-mexico-activity-6689894480000139264-YbKX/)



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Tanneries' Key Operational Concerns Have Been Addressed



Quality of Leather

- Can the desired quality of leather be achieved with Sferes and the target water and chemical savings? - Yes

Impact on Drums

- Will drum drain times be increased? – No
- Will washboards get clogged? – No
- Will drums get damaged by the Sferes? – No

Management of Sferes

- Will it be hard to contain the Sferes? – No
- Will Sferes spill all over the tannery floor with each run? – No
- Can the Sferes be efficiently separated from the hides? - Yes

Productivity

- Will the system significantly increase cycle time? - No
- Will the system be easy to use? - Yes
- Will the system be easy to maintain? – Yes
- Will the system require dedicated resource to run or maintain? - No

Keys to Driving Adoption



Address Technical Challenges

1. Will it produce good quality leather?
2. Is it economical? What will it cost? What's the payback period?
3. How will it work in practice? How will practical challenges be addressed?
4. Can we see a full production system?



1. Raise Awareness

2. Build Demand Across the Value Chain

3. Create Competitive Imperative

QUALUS



Thank You

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