

No more fatty spews

The one thing that a leather product maker does not want to hear from its customers is dissatisfaction with its products or services. When Pakistan-based Leather Field, a leather apparel manufacturer, received complaints about fatty spews on their products, they switched to leathers processed with Novozymes latest enzyme degreasing system



Small skin products have less than 5% residual fat and no chance of fatty spews

Degreasing is one of the most critical processing steps involved in sheepskin production. It is a widely accepted fact that if natural fat is not removed properly from the skins during the manufacturing process, it can give rise to a number of faults in the leather products, including the appearance of fatty spews. But fat removal is a hard job to do for any surfactant or solvent. That is why some tanners turn to enzymes.

Enzymes for leathermaking

Enzymes are nature's own catalysts that

are found in all living matter where they catalyze biochemical reactions. Enzymes have long ago proven their worthiness in making high-quality leather. Among other things, lipolytic enzymes (lipases), can remove fat in all types of leather during degreasing.

Degreasing with lipases eliminates the need for harsh solvents and surfactants – and dry-cleaning machines. Lipases are biologically-derived enzymes that reach a high degree of degreasing efficiency, even up to 90%. Lipases can be added at several stages of leather production, including soaking, liming,

deliming/bating, pickling, and in post tanning processes as well, depending on the product. Which enzyme to use for degreasing is very dependent on the leather. Bovine hides have different properties than small skins, especially when it comes to fat content. Bovine hides often contain 5–10% fat but small skins, particularly from New Zealand and the United Kingdom, contain 30–50% and the two require different enzymes to get the right degreasing results.

Novocor ADL is a tool for small skins producers who want to avoid fatty spews and ensure a very low level of residual fats in leather production. Leather Field discovered the indispensability of the Novocor ADL lipase in order to live up to customer demands and maintain their profile as a high-quality sheepskin apparel manufacturer.

Enzymes to the rescue

Leather Field is one of the largest leather and leather apparel manufacturers in Pakistan who also have their own tanning unit in Sialkot. The company produces all types of leathers such as garment, upholstery, and gloving leathers. The production output amounts to 150 thousand square feet of leather per day, which is more than 3 million square feet per month. From this, 55% is small skins and 45% is bovine leather. Leather Field has made its mark in the leather industry by producing and selling first-rate



Enzymes are the optimal choice for creating high-quality fashion leathers

products to international top brands in the US, Europe and the Far East. With large customers who demand eco-friendly leather treatment and outstanding quality, the need for elimination of fatty spews cannot be ignored.

In late 2009, much to their dismay, Leather Field started receiving complaints about fatty spews on their sheepskin leather products as a result of the solvent and surfactant-based degreasing step they were using at the time. The complaints were not taken lightly. 'We pride ourselves in being a supplier of superior quality leather apparel, so when we started receiving complaints about these fatty spews, we naturally took the problem quite seriously', says Aftab Ahmed, chief technician at Leather Field. Since harsh solvents and surfactants did not do the trick, Leather Field contacted Novozymes' customer solutions manager Muhammed Arshad Gazi who advised them to use an enzyme-assisted degreasing technology to ensure that fat removal would be consistent and efficient. 'Novocor ADL really came to the rescue! It is the only reliable solution for us; not only can we guarantee our customers that they will not experience fatty spews any more, but the overall consistency and quality of the leather is substantially improved compared to our previous standard degreasing system. That's a big deal to us, and to our customers,' Leather Field, CEO, Ajmal Cheema explains.

Farewell natural fats

Unlike surfactants which reduce surface tension to remove fat, Novocor ADL reacts biochemically with natural fats to hydrolyze them into free fatty acids (FFAs) and mono- and di-glycerides, making the fat easier to remove. 'While surfactants may remove some fats from the skin, they are not efficient enough to live up to our standards



A Novozymes' representative with Leather Field's marketing director, Suhail Ghumman

for fat levels. Whichever means we use, it is crucial that we end up with less than 5% residual fat', says Aftab Ahmed. 'That's why we continuously analyse the fat content left after enzyme degreasing. It has time and time again proved to leave only 2-4% fat content. That is low enough to secure no subsequent fatty spews on our leather products, and that gives us a competitive advantage that is hard to match', he added.

Improved yield

For Leather Field, the switch to an enzyme degreasing system using Novozymes Novocor ADL meant that their degreasing process became more consistent. It also improved the tactile properties of the final leathers, including better softness, improved grain quality and look, and enhanced physical properties such as tear and tensile

strength. 'In the end, that means less damage to our leathers, which in turn means reduced trimming during leather processing. The improved yield and great quality that the enzyme achieves actually saves us money and helps us both retain and attract valuable customers', says Aftab Ahmed.

Enzymes are a sustainable alternative to chemical processing. Using lipases instead of solvents and reducing the amount of surfactants means a stronger environmental profile for Leather Field, who are currently investing heavily in their own effluent treatment plant. The company are taking environmental responsibility and living up to the strong demands of their high-profile retail customers. By adopting an enzyme-assisted degreasing technology Leather Field have eliminated their consumption of solvents, which amounted to approximately 200,000 kilograms annually. 'It basically makes our degreasing process more sustainable. That matches the increasing requirements of our customers, and it is indeed also very beneficial for the entire leather industry and the environment', concludes Aftab Ahmed. ■

Novozymes Greasex Ultra is an alkaline lipase that works specifically on sebaceous grease on cattle hides. It is most effective at a pH range of 8-12, which suits the traditional method of degreasing after the deliming/bating step at a pH of 8-9. Surfactants can therefore be replaced by the sustainable Greasex Ultra.

Novozymes Novocor ADL is a stable acid lipase that works at a pH of 3-4. It is the sustainable alternative to degreasing sheepskins from the pickle to wet-blue as well as from wet-blue to natural/dyed crust stage. The enzyme works very well in acid conditions and can, therefore, be added at the pickling stage and after chrome tanning as well.

For more information please visit www.novozymes.com.