

## Sustainable Industrial Production Success Stories 2005 Americana de Curtidos



Americana de Curtidos, a medium sized tannery (240 employees, 6 million USD actives) received a credit worth 150'000 USD to upgrade basically their production process through usage of larger and more technified barrels and to improve their chrome recycling. 6 small barrels are replaced by one large and automated one. Additionally a chrome recycling plant is installed. The

company exports wet-blue to Italy and produces semi-finished and final products for the national market. It has already invested considerable resources in environmental improvements including an advanced effluent treatment facility. The company is also ISO 14001 certified and is considered in environmental aspects as one of the leading tanneries in Colombia.

### Sustainable Production at Americana de Curtidos



*Old installations.*

Latter aspect is basically for the future positioning of the enterprise while the reduced production cost was the main driving force to invest. The payback excluding GCT reimbursement was 3 years while with GCT reimbursement the payback can be reduced to less than 2 years. The barrier for the enterprise was access to finance (guarantees) and the payback time. Although 3 years may seem short, the situation of tanneries is critical in Colombia, banks are reluctant to lend and tanneries are under cash shortages. Investments are thus only realized if payback times are very short.



The project also has minor social benefits as working conditions in the tanneries improve due to more automated processes and reduced odor of effluents.

*New installations.*

## Results

---

The investment realized by the company is 160.000 USD in new equipment. The project begins with the analysis of the environmental impact generated by its process and activities, the study is done with the methodology of index of risk (IR), with this methodology the environmental significant impact and the process with the biggest influence in environmental terms can be prioritized. The conclusion of this analysis is that the biggest environmental impacts that have to be improved is the quality of the wastewater, although these wastewater is treated in a wastewater plant but it still has a high load of contamination and residual chrome which is not removed completely.

The project was focused in two aspects, which are related with the optimization of the tanning process and with the chrome recovery from the waste liquor, improving also the productivity of the enterprise and optimizing the tanning process

The general advantages of the chrome recovery process are shown: Waste water chrome level reduction; obtained chrome is more similar to the fresh chrome than the one obtained from the recovery liquor; there is not accumulation of residual volume; process can work indefinitely, it is flexible and can be applied to any kind of hide; the leather doesn't lost its quality.

In the project, Kg Cr<sub>2</sub>O<sub>3</sub>/ kg of hide tanned was identified as the main indicator and m<sup>3</sup> of residual bath in the PTAR/ Kg of hide tanned as secondary indicator.

The environmental benefits of the change are reduction of 99% of chrome consume per hide tanned and reduction of 74% of waste water out of the process. Due to the fact that they are taking out the chrome, the reduction of sludge contaminated was significantly.

In the secondary indicator (m<sup>3</sup> of residual bath in the PTAR/ Kg of tanned hide) a 73.8% reduction was obtained.

Regarding the main economics savings, the related to chemical products are truly important, and are showed as follows: sodium chloride 50%, sodium formic 30%, chromic salt B 6% and water process consumption 30%. The sludge generation is lower because the chrome salts is retaining with the recirculation and recover system. Additionally is expected that this change will allowed in the future the change to a biological treatment instead the physical-chemical, with this the odor and sludge generation are going to be lower.

## Contacts

Colombian Cleaner Production Center  
Carlos Arango, director  
[carlos.arango@cnpml.org](mailto:carlos.arango@cnpml.org)  
[www.cnpml.org](http://www.cnpml.org)

State Secretariat for Economic Affairs  
Stefan Denzler, Trade and Clean Technology Co-operation  
[stefan.denzler@seco.admin.ch](mailto:stefan.denzler@seco.admin.ch)