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Our Activities

- An Association with over 600 members from India and abroad working since last 68 years for the growth and development of Leather and its allied industries.
- Organize seminars, symposiums, workshops in order to share information, knowledge & latest development and interactions for the benefit of all concerned.
- Organize Human Resource Development programmes on regular basis.
- Publish for over 60 years, a technical monthly journal namely "Journal of Indian Leather Technologists' Association" (JILTA), widely circulated through out the World.
- Publish books for the benefit of the students at various levels of study, for the Research Scholar and the Industry.
- Work as interface between Industry and the Government.
- Assist Planning Commission, various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies for the growth of the Industry.
- Assist small and tiny leather goods manufacturers in marketing their products by organizing LEXPOs in Kolkata and different parts of India.

Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies (IULTCS)]

'Sanjoy Bhavan', 3rd Floor, 44, Shanti Pally, Kolkata- 700 107, WB, India
Phone : 91-33-2441-3429 / 3459 Telefax : 91-33-2441-7320
E-mail : admin@iltaonleather.org; mailtoilta@rediffmail.com
Website : www.iltaonleather.org



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Communications to Editor through E-mail :

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Indian Leather Technologists' Association

'Sanjoy Bhavan', 3rd floor, 44, Shanti Pally

Kasba, Kolkata - 700 107, WB, India

Phone : 91-33-2441-3429

91-33-2441-3459

E-mail : admin@iltaonleather.org;
mailto:ilta@rediffmail.com

Web site : www.iltaonleather.org

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

Indian Leather Technologists' Association is a premier organisation of its kind in India was established in 1950 by Late Prof. B.M.Das. It is a Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS).

The Journal of Indian Leather Technologists' Association (JILTA) is a monthly publication which encapsulates latest state of the art in processing technology of leather and its products, commerce and economics, research & development, news & views of the industry etc. It reaches to the Leather / Footwear Technologists and the decision makers all over the country and overseas.

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Phone : 91-33-24413429 / 91-33-24413459
E-mail : admin@iltaonleather.org / mailtoilta@rediffmail.com
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If you would like to know more about Stahl BeTan®, and what we can do for your business, visit stahl.com or contact david.sabate@stahl.com

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New Trend in Global Fashion Hub



Paris is expected to overtake New York to become the number one city for relevance and potential in the global fashion industry by 2025, according to IFDAQ Global Cities Consumer IPX (Index). The likelihood is that London would rise to third place, surpassing Milan, the global research finds out. IFDAQ Global Cities Consumer IPX (Index) evaluates global cities according to four dynamic-weighted key factors, including general economy, fashion economic performance, market capitalization and industry influence. These factors take into account infrastructure, GDP, brand presence, wealth, consumption power and creative power.

Paris is likely to reap the benefits of Brexit, including faster European Union integration process and less competition from London, according to Frédéric Godart, co-CEO of IFDAQ and associate professor of organizational behaviour at INSEAD. "The competition with London was fierce, but now that London is out, Paris is going to be the de facto economic capital of the EU," he says. New York is losing traction economically, partly because of the US-China trade war, says IFDAQ co-CEO Daryl de Jorí. A further boost for Paris, defining it as the world's nucleus of luxury, is the ever-increasing dominance of Paris-based conglomerates LVMH and Kering. Godart makes the comparison with Silicon Valley's dominance of technology. "It's a classical capitalist concentration dynamic, a clustering effect."

The French capital's central role seems assured. "Paris has the allure, the glamour and is the home base for two huge influential fashion groups that anchors it," says Julie Gilhart, industry veteran and chief development officer of Tomorrow Consulting. "In my fashion history I've seen Milan, London and New York going up and down. The only thing that remains pretty solid is Paris." In 2019, the world's 10 largest luxury companies, led by LVMH and Kering, increased their share of industry revenue, accounting for 51 per cent of all sales by the top 100 companies. The Covid-19 pandemic has since accelerated luxury

polarization, with high-performing companies weathering the storm while smaller players struggled. Analysts say these conditions provide fertile grounds for M&A, with market consolidation to the benefit of the biggest players. "Paris is still taking a lot of advantage from its last 20 years of mergers," says de Jorí. Since 2000, LVMH and Kering between them have acquired or bought stakes in more than 10 leading luxury brands.

The rise of London over Milan is a less straight forward story and might reflect a progressive weakening of Milan's status rather than a strengthening of London's role, says Godart. While both cities are facing economic uncertainties ranging from the impact of Brexit to the economic impact of the Covid-19 pandemic, London has a more dynamic economy. "For London, it is much more of a temporary challenging economic state and we believe it will soon recover, while Milan never really recovered from the economic crisis of 2008," says de Jorí. "The Italian economy is too weak to build more traction and interest from brands."

The Italian fashion industry and the country's wealth are also distributed among different cities, including Florence, Venice and Rome, rather than concentrated in one place, as in London and in Paris. Godart says that the "concentration effect" is absolutely critical for the relevance of cities such as Paris, London, Tokyo and Moscow. Besides Italy, Spain, Germany and China are all examples of countries where power is shared between two or more cities.

David Gilbert, professor of urban and historical geography at Royal Holloway, University of London, who has researched the geographies of fashion, says London appears the most vulnerable of the four capitals because it derives its status not from the luxury brands based there but from its reputation as a source of edginess and innovation. "London, more than the others, depends on that churn of ideas. You can imagine another city doing the same things that London does in terms



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of creativity, innovation and avant-garde,” he says. Post-Brexit, rising prices and economic uncertainties could well squeeze independent designers out of the city.

In the IFDAQ Index, Paris, New York, London and Milan would maintain their dominance until at least 2030. But the Index predicts a gradual decrease in importance as other cities step up their influence — including Tokyo, Los Angeles, Shanghai and Moscow. Gilbert says that in the early 2000s it was commonly anticipated that the future fashion order would shift towards cities such as Shanghai, Mumbai or São Paulo. Instead, the traditional order has reasserted itself over the past 20 years. “Those fashion capitals are locked in symbolically in a way that almost becomes self-fulfilling,” he says. “As long as the global elite looks at those places as markets with elite status, that stays in place.”

Gilhart is wary of making long-term predictions, particularly after the Covid-19 pandemic has led to industry reevaluation of the structure and meaning of fashion weeks. “Covid has made us rethink everything, including what is valid about fashion week and what it’s not,” she says,

She adds that cities that might seem less relevant now could become important again by developing new formats or launching new trends. Shanghai is well positioned to become a

force thanks to an abundance of talent and creativity. Launched in 2001, Shanghai Fashion Week has steadily increased its relevance on the global fashion calendar, attracting international buyers with shows that mix new local talents and international brands eager to tap into the Chinese market. The showcase was the first to return as a largely physical event in October 2020 after the Covid-19 pandemic disrupted the international show calendar. “We will see a time when New York, London, Milan, Paris and Shanghai will be equally as relevant,” Gilhart predicts. Moscow may be a significant city to watch. It is forecast to grow in importance for the fashion industry, surpassing Shanghai in 2026, according to the IFDAQ Global Cities Consumer IPX (Index). The concentration of wealth and consumption in Moscow would boost its rise in prominence. In Russia, the capital city accounts for more than 70 per cent of luxury consumption, contrasting with China where luxury consumption and wealth are spread among many first-tier cities. Anna Lebsak-Kleimans, CEO of Fashion Consulting Group Russia, adds that luxury brands rarely open stores beyond three cities in Russia — Moscow, Saint Petersburg and Sochi.

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA

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Solidaridad

Solidaridad Network is a global civil society organization providing efficient, scalable and economically effective and innovative sustainability solutions in various agricultural and industrial commodities such as:



**EFFECTIVE WASTE MANAGEMENT
AND SUSTAINABLE DEVELOPMENT
IN KOLKATA LEATHER CLUSTER(BANTALA)
2020 -2023**



Madam Mamata Banejee, Honorable Chief Minister of West Bengal launched the leather project of Solidaridad and partners for Kolkata leather cluster in september 2020

Circular Economy

Effective solid waste management

Capacity building programme



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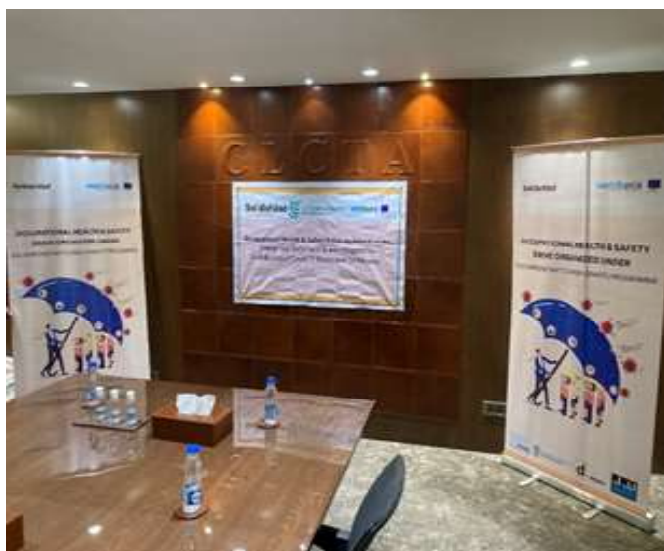
Occupational Health and Safety (OHS) focuses on primary prevention of hazards while dealing with employees at the workplace. The risk factors at the workplace and several determinants of health of the workers account for accidents, diseases, and communicable diseases and stress related disorders and others. Occupational health and safety (OHS) relates to safety, health and welfare issues at workplace.

OHS aims at:

- The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.
- The prevention amongst workers of departures from health caused by their working conditions.
- The protection of workers in their employment from risks resulting from factors adverse to health.
- The placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities.
- The adaptation of work to worker and of each worker to his job.
- Improvement of working environment.
- Development of work cultures and organizations to support health and safety.
- Promotion of positive social climate and smooth operation.
- Enhanced productivity of the organization.

To ascertain the above points, **Solidaridad** felt and saw a scope to cover Leather cluster workers under Covid-19 Medclaim for 1 year, acknowledging the current requirement. The workers are more prone to the virus as they travel using local transport. The treatment cost is significant. To address this concern, **Solidaridad** along with **CLCTA** and **tanner-ies** came up with the idea to provide health coverage to the workers under this policy. Covid-19 has had some great economic implications on the daily lives of people. Hence, providing insurance to the workers deemed suitable to overcome this pandemic.

Solidaridad covered workers suggested by CLCTA and other Tanneries and the insurance partner is Sivana Insurance. CLCTA arranged a Medclaim certificate distribution programme for the workers. The programme was steered by Mr. Pradipta Konar (Project Manager-Solidaridad) and eminent dignitaries of CLCTA and Tannery owners. As a good will initiative CLCTA arranged handouts for all the workers.



Solidaridad

Covid-19 insurance distribution workshop at CLCTA



Covid-19 insurance distribution workshop at Tanneries



From the desk of General Secretary



WEBINAR ON “3RD PROF. S. S. DUTTA MEMORIAL LECTURE”



Due to Pandemic COVID this year “Prof. S. S. Dutta Memorial Lecture” was organized by our association through digital platform at 7.00 pm on 2nd February’ 2021. It was an initiative of Southern Regional Committee of ILTA.

The program resumed with the introductory speech delivered by Mr. Susanta Mallick, General Secretary, ILTA. Mr. Mallick briefed the biography of Prof. S. S. Dutta and described in short, the procedure of the webinar followed by the Welcome Address delivered by Dr. J. Raghava Rao, Vice-President, Southern Regional Committee of ILTA.

Dr. Raghava Rao in his address welcomed all the dignitaries and the participants of the event. He mentioned Prof. Dutta as the Author of the Bible of Leather Fraternity. He also mentioned that in his student hood the book authored by Prof. Dutta titled ‘An Introduction to the Principals of Leather Manufacture’ and the Students Corner also authored by Prof. Dutta in JILTA was the main references of their study. Dr. Rao welcomed to Dr. P. V. Sambasiva Rao, Executive Director, Alpharama Ltd., Kenya, East Africa, an alumnus of CSIR – CLRI, the Hon’ble Speaker of the day.

On his conclusion, Mr. Mallick expressed heartfelt thanks to Dr. V. K. Paul, Hon’ble High Commissioner of India in Kenya and requested him to deliver few words to the audience. Dr. Paul offered thanks to Mr. Mallick and Dr. P. S. Rao for inviting him in the webinar. He very emotionally recalled the Contribution of Prof. Dutta to the Indian leather fraternity. He also praised the speaker Dr. P. V. S. Rao, as a great scholar and a successful Indian entrepreneur who has been taking an important role in Indo-African business relationship. He briefed that how the economic relation between India and Kenya has been gradually increasing through Leather Industry and its entrepreneurs like Dr. P.V.S Rao.

Mr. Mallick then invited Dr. Buddhadeb Chattopadhyay, Former Principal of GCELT, Kolkata and MCKV College of Engineering to deliver few words. Dr. Chattopadhyay in his deliberation recalled Prof. Dutta as a Nobel teacher. He said that authoring of the book was only for his students and not for business. In the age of manual press and when Google was not on fingertips for information, it was a very hard task to compose and proof reading of the book manually with the help of his students only and not with other big scholars. In a word Prof. Dutta was a self-thought person, he added.

Mr. Mallick then declared the name of the following students of B.Tech & M.Tech Leather Technology Examination who's project work has been adjudged the best in year 2020 from different institutes :-

- Ms. Pranita Chakraborty, B.Tech, Leather Technology, GCELT-Kolkata, project titled **"Synthesis and Application of Functionalized Activated Carbon from Leather Trimming Waste in Dye Removal – A Waste to Wealth Approach"**
- Ms. Mohammed Kathija Beevi S, M.Tech, Leather Technology, Anna University, Chennai, project titled **"Studies on Superhydrophobic Self-cleaning Leathers"**
- Mr. Lingareddy Hari Sainath, M.Tech, Footwear Science & Engineering, Anna University, Chennai, project titled **"Design Innovation of Inverted Cleats in Footwear Suitable for Icy Surface"**
- Mr. Ankush Jain K, B.Tech, Leather Technology, Anna University, Chennai, project titled **"Process Standardization of Chrome Free Leather Manufacture for High End Application"**
- Mr. Deepak Awasthi, B.Tech, Leather Technology, HBTU-Kanpur, project titled **"Tannery Effluent Treatment and Zero Liquid Discharge"**

Due to Pandemic Covid, the name of the Best Exporter Awardees for overall Export performance for F.Y.2019-20 was not declared by Council for Leather Exports.



After conclusion of the award declaration session Mr. Mallick introduced the honorable speaker Dr. P. V. S Rao, Executive Director, Alpharama Ltd., Kenya and called on him for delivering the prestigious Prof. S. S. Dutta Memorial Lecture titled **"Repositioning the Indian Leather Sector to the Global Needs & Scenario – Post Covid"**.

Before starting his lecture, Dr. Rao offered his homage to Late Prof. S. S. Dutta. He recalled his student hood when the book authored by Late Prof. Dutta was his main course of study. He explained that the current generation should understand the difference between study and knowledge gathering, what Prof. Dutta had tried in during his livelihood. Then he explained the current situation and upgradations of industrial relationship between Kenya and India. He informed that Kenya Govt is much interested to grow their leather sector in order to play a major role in Kenyan Economy with the help of Indian Leather Technological Institute like CSIR – CLRI.

However, after conclusion of the lecture Dr. Rao replied a number of questions from audience.

The programme came to end with offering Vote of Thanks by Dr. R. Mohan, Secretary, Southern Regional Committee of ILTA.

There were around 100 participants over Zoom platform and more than 100 viewers participated on the ILTA HR Face Book Live.

This video recording of the entire program is also available on the official YouTube channel of ILTA (**ILTA Online**) and the website of the Association – www.iltaonline.org

WEBINAR ON "MOTIVATIONAL SPEECH"





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A Webinar with a Motivational Speech titled “**What do you Care, What Other People Think**” was organized by ILTA with it's HR Committee on 26th February'2021 at 7.00 pm on digital platform.

Dr. Buddhadeb Chattopadhyay, Former Principal, Govt. College of Engg. & Leather Technology and MCKV Inst. of Engg. was the hon'ble Speaker of the webinar.

The programme started with the Introductory Speech delivered by Mr. Susanta Mallick, General Secretary, ILTA followed by the Welcome Address delivered by Mr. Asit Baran Kanungo, Vice President, ILTA.

On conclusion of the Welcome Address, Mr. Susanta Mallick,

introduced Dr. Chattopadhyay with the audience and called him on for delivering his lecture. It was really an enthusiastic presentation from Dr. Chattopadhyay. After ending his lecture Dr. Chattopadhyay replied a number of questions from audience.

Mr. Subir Dutta, Coordinator, Seminar Committee then offered the Vote of Thanks and declared the programme over.

There were around 45 - 50 participants over Zoom platform and more than 70 viewers participated on the ILTA HR Face Book Live.

This video recording of the entire program is also available on the official YouTube channel of ILTA (**ILTA Online**) and the website of the Association – www.iltaonleather.org

YOUTUBE CHANNEL OF ILTA

An official **YouTube** Channel of our Association (**ILTA Online**) has been launched from 1st November' 2020. You may follow and view all the video recordings of different Seminar & Symposiums on this channel by opening it time to time.

You are requested to kindly do 'Like' the channel and 'Subscribe' it by pressing the Bell Icon beside it to get regular updates on priority basis.

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Faculties, Research Scholars and students of various Leather Institutes may wish to publish their Research / Project papers in an Article form in this monthly technical journal, JILTA.

Interested author may sent their paper (in MS Word format) along with a PP Photograph and Contact details like Email, Mobile etc. to our email IDs : admin@iltaonleather.org / jiltaeditor@gmail.com

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(**Susanta Mallick**)

Read and Let Read :-

General Secretary and the Members of the Executive Committee are available to interact with members at 19.30 hrs, over Phone / Conference call on every Thursday



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INDIAN LEATHER PRODUCTS ASSOCIATION

The Indian Leather Products Association (ILPA), established in 1987, is a premiere representative body of manufacturer-exporters of superior quality leather and leather products with head office in Kolkata and a regional office in Chennai.

IMPORTANT ACTIVITIES OF ILPA :

- Brings together manufacturer & merchant exporters on a common platform.
- Stimulates growth & development of the industry as a whole.
- Promotes export of leather & leather products.
- Develops & maintains symbiotic liaison with international trade bodies & Chambers of Commerce.
- Organises trade delegations to international fairs & seminars.
- Organises various Seminars/workshops both the benefit of its members and industry.
- Promotes International Fairs and RBSMs like IILF Kolkata, ILPA Buyer Seller Summit.
- Organises the ILPA SHOW : Leather on the Ramp , one of the most prestigious and sought after Fashion event in Eastern India.
- Closely involved in setting up the Calcutta Leather Complex (CLC).
- Runs and manages the Freya Design Studio : a CLE award winning Design Studio both for leather goods and footwear.
- Runs and manages the ILPA INFRASTRUCTURE DEVELOPMENT FOUNDATION (IIDF) – a state of the art Common Facility Centre.
- Imparts Skill Development Training through ILPA Technical School.



Indian Leather Products Association
Plot no 1647, Zone 9, Calcutta Leather Complex,
Karaidanga, West Bengal, Pin Code: 743502
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in a centrally located
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A Novel Method of Alkaline Salt Based Deliming Process : A green approach

Sandip Das¹, Anjan Biswas², Sanjoy Chakraborty³

^{1,2,3} Department, of Leather Technology, Government of Engineering and Leather Technology, Salt Lake, Kolkata



Summary:

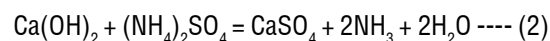
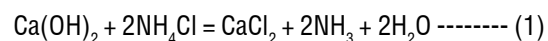
At present the ammonium salt based deliming process is well known for the generation of toxic ammoniacal nitrogen gas which have a high degree of negative impact on the environment as well as human health. To overcome this problem usage of different salt has been adopted for carrying out the above process in order to achieve cleaner and greener leather processing. In the present study the lime liquor has been neutralized using sodium bisulfite (NaHSO_3). To optimize the deliming process the quantity of sodium bisulfite essential for neutralization process is standardized. In comparison with ammonium salt based conventional deliming process ($\text{pH} = 9.21 \pm 0.39$) the extent of neutralization of lime liquor by sodium sulphite salt ($\text{pH}: 6.53 \pm 2.2$) gives more respectable results ($p < 0.05$) in different pH levels and therefore pickling process is not necessary. Moreover, in contrast with conventional treatment ($1025.3 \pm 236.7 \text{ mg L}^{-1}$) remarkable 95.7% decrease of Ca concentration in solution after neutralization of lime liquor by NaHSO_3 ($43.9 \pm 19.6 \text{ mg L}^{-1}$). Also, after treatment with NaHSO_3 the results of Cr tanning of the hides gives comparable results with conventional process. Therefore, the results pave the way for applying NaHSO_3 salt as a substitute in conventional leather processing. Moreover, this newly developed recipe seems to be environmental friendly as well as economically feasible.

Key words: Ammonium chloride, Deliming, Sodium bisulfite salt, Neutralization, Green technology

Introduction

Green technology is a highly effective method for pollution prevention process. Principles of green chemistry are mainly applied to reduce or remove the use or production of dangerous

substance in the manufacturing process as well as product. At present the conventional leather processing is a chemically and energetically intensive multistage process that employs various biological, inorganic, and organic materials and converts the putrefiable collagen matrices into nonputrescible one. Therefore, viable cleaner leather processing methodology is aimed to overcome environmental and economic constraints. Growing environmental regulations necessitate the need for the alternatives in the conventional leather production. Current practices of pretanning and tanning processes discharge enormous amount of pollutants, which accounts for nearly 99% of the total pollution from a tannery effluent¹. Wide variation in pH during the conventional leather processing leads to the discharge of large volumes of aqueous waste which comprises biochemical oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), sulfides, sulfates, chlorides, and different transition metals and heavy metals²⁻⁴. Further toxic gases such as hydrogen sulfide, ammonia, and solid wastes such as lime sludge are generated during the pretanning process. Though 14-15 steps are there in conventional leather processing but mainly from the limeyard and conventional deliming process are contributed most of the pollution load and unfavorable consequences to the environment⁵. Ammonium salts are preferred for this deliming process but the main problem of conventional deliming process is to release ammonia (NH_3) which is clear from equation (1) and (2)



Depending upon the concentration of acids in the atmosphere the emitted NH_3 undergo conversion to ammonium ion (NH_4^+)

*Corresponding Author Email ID : destinationsandip@gmail.com

in aerosol or in clouds⁶. NH_3 also catalyzed the atmospheric oxidation of sulphur dioxide (SO_2) to sulphur trioxide (S_2O_3) and it also reacts with the atmospheric acids like H_2SO_4 , HNO_3 and HCl to form the ammonium salts which are the main components of smog aerosols⁷⁻⁸. Moreover, by the discharge of ammonia cal nitrogen in the effluent, NH_3 is poisonous to fish and other aquatic life. After dissolved into the in surface water, it exists in two forms NH_3^0 and NH_4^+ and increase of every unit of pH the toxicity of NH_3^0 increases ten times⁹. NH_3^0 displaces potassium ion (K^+) and depolarizes neurons which activate N-methyl-D-aspartate (NMDA) type glutamate receptor causes influx of excessive Ca^{2+} which leads to cell death of central nervous system⁹. Dry or wet deposition of NH_3 alters the soil pH which can effects the plant growth environment⁵. The release of NH_3 gas, which has irritating and corrosive property, into the working environment causes instant burning of the nose, throat and respiratory tract, bronchiolar and alveolar edema, headache, nausea and drowsiness¹⁰. Moreover, another harmful chemical namely nitrosamine is also produced from the reaction of ammonium compounds or amines. In short, the ease with which secondary amines form nitrosamines is inversely related to their basicity. Nitrosamine forms at slightly acidic pH in water due to microbial interaction. These compounds are susceptible of transforming into active metabolites which can act on nucleic acids – onset of genetic perturbations causing mutagenesis¹¹.

As per National Institute for Occupational Safety and Health (NIOSH) the exposure limit for NH_3 in work place was 50 ppm as an 8-hour Time weighted average (TWA). Whereas, the American Conference of Governmental Industrial Hygienists (ACGIH) revise this limit to 25 ppm TWA and to add a 35-ppm 15-minute short-term exposure limit (STEL)¹². This necessitates the alternative green approaches by revamping this individual processing step. Although a great deal of research has gone into revamping the whole or part of leather processing steps, but very few attempts have been made to replace ammonium salt in a techno-economic viable manner. Therefore, an ammonium salt free deliming process has been attempted in order to develop a greener leather processing which reduce the pH from 12.5 to 5.5, results reduction of swelling and preparation of the matrices for enzymatic treatment. In this present study, NaHSO_3 salt has been applied to neutralize the alkaline lime liquor. The extent of neutralization of lime liquor has been measured from both the control and experimental processes and techno-economic feasibility of the developed recipe has also been assessed.

Materials and methods:

Wet salted cow hides and goat skins were chosen as the raw material for the study. All chemicals like Calcium hydroxide $\text{Ca}(\text{OH})_2$, NaHSO_3 , Ammonium chloride used for leather processing were of GR from Merck, India. After conventional deliming vis a vis bisulfite deliming, Cr tanning was done on NaHSO_3 treated hides whereas after pickling the Cr tanning was done on NH_4Cl treated hides. Chrome penetration was checked and boil test was done. All the experiment was repeated six times to minimize the standard errors. Oneway ANOVA was done by using Statistica 8.1 software and all the graphical representation were made by Origin 2016 software.

Solution study:

Variable amount (0.2g, 0.5g, 1 g, 1.5g, 2g, 2.5g and 3g) of NaHSO_3 salt was taken in 100ml beaker and 0.1g lime and 50ml distilled water was added with each sample of bisulfite salt. Mechanical stirrer was used to mix the solution. After that pH of each solution was checked by using Eutech P35 tester. Then all the solutions were filtered with 0.2 μm filter paper to measure the Ca content in Methrom 761 ion exchange chromatography following the standard method¹³. Simultaneously the same process was done with the use of Ammonium chloride (NH_4Cl) which was used for present conventional tannery operation. Each experiment was done in triplicate at 30°C.

Results and discussion:

Comparison of Ammonium Chloride and Sodium Bisulfite Solution in Deliming Process:

The conventional process sequence requires deliming for the pelts treated with lime. ammonium chloride is used for the conventional deliming process to neutralize the alkalinity. This leads to the formation of calcium chloride and ammonia release into the atmosphere. At the completion of deliming, the pelts are treated with bating enzymes for the removal of non collageneous proteins. Use of sodium bisulfite, a bi salt, NaHSO_3 has been explored as a substituent of Ammonium chloride in non-conventional deliming process in order to prevent the generation of ammoniacal nitrogen. NaHSO_3 neutralizes lime, resulting the alteration of pH.

However, pH wise 0.1 N ammonium chloride has pH 5.5 whereas 0.1N sodium bisulfite bears pH of 3.9. Therefore, bisulfite

solution is more acidic than ammonium chloride. This is helpful in better neutralization of lime from limed pelt than even ammonium chloride itself. Again, generation of ammonia gas is also avoided in the neutralization process of lime from the pelt. Comparison between sodium bisulfite and ammonium chloride solution in respect of neutralization of lime highlights another aspect. Ammonium chloride simply neutralizes alkalinity but sodium bisulfite is not only acidic, it has had a reduction potential too. This causes any sulfide/bisulfide present in the pelt not to turn back to lethal hydrogen sulfide gas generation which in general is the case for straightway acid-alkali neutralization process in presence of sulfide. Further, lower pH of bisulfite solution helps maintaining a little lesser pH of the delimed pelt assuaging chrome tanning activity. Nonetheless, bisulfite ion is a strong complexing agent also. Its complexing property is an instrumental for chrome tanning at higher pH too.

The reaction mechanism of NaHSO_3 is as follows:

NaHSO_3 is a weakly acidic species and its conjugate base is the bisulfite ion HSO_3^-

$\text{HSO}_3^- \rightleftharpoons \text{SO}_3^{2-} + \text{H}^+$

pH of NaHSO_3 is 3.85

pK of NaHSO_3 is 6.97

$\text{Ca(OH)}_2 + 2\text{NaHSO}_3 = \text{Ca(HSO}_3)_2 + 2\text{NaOH}$

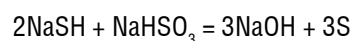
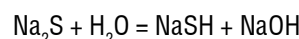
Here $\text{pH} < \text{pK}$ and chances of formation of $\text{Ca(HSO}_3)_2$ is also high.

Calcium Hydroxide [Ca(OH)_2] is alkaline in nature, it gives pH around 12 during Liming. But if the limed pelt, after thorough washing with plain water, is treated with NaHSO_3 then due to the acidic nature of NaHSO_3 it will neutralize the limed pelt and bring down the pH around 5.5.

To get the best result different proportion of NaHSO_3 is used. Though 0.2g NaHSO_3 not giving the satisfactory result because this little amount of NaHSO_3 cannot neutralize the alkaline lime. However, increase of NaHSO_3 content (0.5g-3g) neutralize the lime more effectively and gives a lower pH around 5.2-5.9 (Fig. 1). This has a major impact on bating. Alkaline bate has no effect at such low pH. Also, in this pH, free and bound lime completely removed from the pelt and pelt is ready for next operation. But in conventional process the pH never decreases below 8.0 and for that reason pickling is needed. Likewise pH, the Ca value between NH_4Cl based conventional deliming ($1025.3 \pm 236.7 \text{ mg L}^{-1}$) and NaHSO_3 deliming ($43.9 \pm 19.6 \text{ mg}$

L^{-1}) highly differs and ANOVA results ($p < 0.05$) justify this findings (Fig. 2). That means the amount of Ca discharged through delime liquor into environment will be less or the sequestration of Ca ion from the pelt appears less. This is taken care of by thorough washing of limed pelt.

Due to the low pH range for the NaHSO_3 based present deliming process the pickling step is not necessary and the pelt can attain directly the chrome tanning where the formation of ammonia is nil. Again conventional pickle pelt and NaHSO_3 treated delimed pelt gives the same kind of chrome tanning effect like feel, uptake and other bulk properties and boil test also justify this findings. By the conventional method the chrome tanned pelt resists shrinkage at 100°C and here NaHSO_3 treated delimed pelt gives the same kind of boil test result after chrome tanning operation. In addition, cross-section analysis also gives an idea about the chromium distribution in hides and skins and here NaHSO_3 treated delimed pelt gives better distribution of cross section of chromium. Moreover, after liming operation the residual Na_2S reacts with water and produce NaSH . In the NaHSO_3 based deliming process the NaSH reacts with NaHSO_3 and avoids the formation of hydrogen sulfide gas – a significant departure from the conventional process.



However, the problem with ammonium deliming is the generation of hydrogen sulphide (H_2S) from residual sulphide left from liming at this low pH 5-6. Even though the amount of sulphide left in the pelt is very low, the noxious H_2S is found to release. This sulphide generation can be avoided by treatment with bisulfite.

Conclusion

First of all the present NaHSO_3 based deliming process is an ecofriendly process because in this process hazardous NH_3 emission is nil. That means negative impact regarding NH_3 emission will be overcome by this process. Secondly, in this process direct Cr tanning is possible without pickling and due to omit of the pickling process huge amount of H_2SO_4 and salinity which have different adverse effects on environment, discharged through pickle liquor, stops permanently. Apart from that, it was also measured that by conventional process, after pickling operation with pickle liquor different metals along with

other chemicals (Table 2) are directly discharged to the environment. These metals and factors have various well known adverse effect to the biota and biochemical cycle of environment. But, the present deliming process aids to minimize the negative impacts of pre tanning process. Moreover, the cost of electricity, chemicals, manpower that are involved for the pickling process will not be necessary in the present study and also the time will be saved. Thus, use of NaHSO_3 appears not only an innovative insertion in ecofriendly process but also a cost effective method which would surely draw interest to the tanners.

Acknowledgement

The authors express gratitude to the Director of Technical Education, Government of West Bengal, India for cooperation and necessary support. Second author thankfully acknowledges University Grant Commission for DSKPDF grant.

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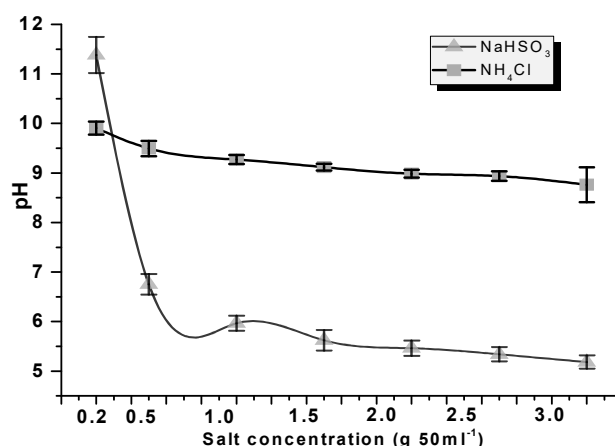


Fig. 1: The variations of pH in solution by using two different salts in various concentrations.

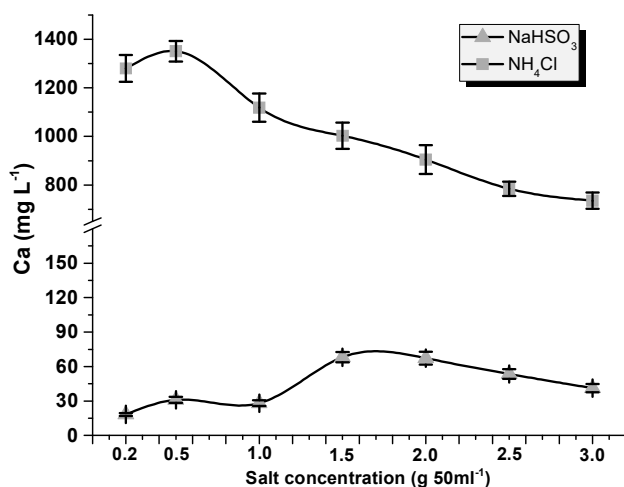


Fig. 2: The variations of Ca content in solution by using two different salts in various concentrations

Table 1. Computed F values of One-Way-ANOVA within NaHSO_3 and NH_4Cl based deliming process in seven different concentration for pH and Ca content in solution

Salt concentration in 50ml water	pH	Ca
0.2g	86.88	3098.01
0.5g	669.78	5722.51
1.0g	2035.14	2092.47
1.5g	1551.83	1783.44
2.0g	2491.63	1186.26
2.5g	2591.62	3645.21
3.0g	550.32	2547.82

*The F values with bold faces are significant at $p < 0.05$.

Table 2: Amount of different factors present in the pickle liquor in different tanneries of Kolkata Leather Complex area.

Factors	Concentration	Factors	Concentration
C (g L ⁻¹)	1429 ± 56.04	NH ₄ (mg L ⁻¹)	187.32 ± 29.6
Cr (mg L ⁻¹)	1.91 ± 0.49	Cl (mg L ⁻¹)	33.92 ± 12.9
Mn (mg L ⁻¹)	1.52 ± 0.28	PO ₄ (mg L ⁻¹)	4.75 ± 0.8
Fe (mg L ⁻¹)	17.21 ± 1.41	NO ₃ (mg L ⁻¹)	58.3 ± 13.4
Cu (mg L ⁻¹)	1.81 ± 0.21	SO ₄ (mg L ⁻¹)	127.3 ± 36.3
Zn (mg L ⁻¹)	14.67 ± 2.1	Acidity (mmol L ⁻¹)	130.55 ± 22.42
Pb (mg L ⁻¹)	1.02 ± 0.16	Total Hardness (m L ⁻¹)	4.71 ± 1.33

Read and Let Read :-

MINUTES TO REVIEW THE ROLE OF INDUSTRIAL ASSOCIATIONS UNDER THE AMBIT OF THREE-TIER MONITORING MECHANISM



A Meeting to review the **role of industrial associations under the ambit of three-tier monitoring mechanism** was held on 16.02.2021 at 1500 hrs under the Chairmanship of Sh. Ravi Agrawal, Additional Secretary, MOEF & CC through video conferencing using Microsoft Teams software. The meeting was attended by CPCB, NPC, QCI, NEERI and industrial associations. List of the participants is at **Annexure I**.

1. Chairman welcomed the participants and asked Dr. Shruti Rai Bhardwaj, Additional Director, MoEF & CC to share the background against which the present meeting was being held. She referred to the recent deliberations in the Ministry with reference to strengthening of monitoring and compliance of environmental conditions through engagement of industry associations (IAs) and environmental auditors. IAs working on the ground with direct link to the industries can act as a bridge between the government and industries for contributing towards environmental compliance and thus sustainable growth of the country.

2. The Chairman further added that the Ministry is continuously striving towards streamlining of Environmental Clearance (EC) process and is in the process of optimizing EC conditions. At the same time it is important that we take steps to set up a mechanism for effective monitoring of compliance in context of environment obligations. The monitoring mechanism is being strengthened for better environment and sustainable development. The envisaged monitoring mechanism proposes to adopt an inclusive approach in which role of industry and industrial associations are envisaged. While placing reliance on self reporting towards compliance and adopting a non-intrusive approach, the Industrial Associations are expected to provide support through peer group monitoring of its constituent members.

3. With their presence in the field and regular interaction with units/ members, IAs have greater informal persuasive potential. Therefore, IAs are proposed to be engaged in associating themselves towards promoting better self-compliance by sharing of best practices adopted

by better compliant members with erring members, sensitizing erring industrial members about the red flags raised by the system and prompting them to comply, create peer pressure so that non-compliant members are better disciplined. Further, with closer interaction with constituent members, IAs can also provide feedback to the Govt. about the concerns and challenges being faced by the Industry from time to time. IAs while identifying the non-compliance shall also suggest appropriate remedial actions, as part of their engagement in the mechanism. This shall help in calibrating policies.

4. In the above context, formalizing the role of IAs through suitable regulatory enablement can be considered and further deliberated upon. However, it was clarified that the IAs should not expect any financial support from the Govt. in lieu of such services. The IAs should view the engagement from the perspective of sustainable growth that ensures overall growth of the industry as such. On that note, the Chairman opened the floor for discussion.
5. Ms Geeta Menon, Joint Secretary, MoEF & CC opined that these are preliminary deliberations and the contour of the complete framework need to be evolved as a scheme on the basis of detailed deliberations amongst the IAs, deliberations with agencies involved in 3 tier monitoring framework, and conclusive deliberations with the government on the basis of all the available inputs.
6. Sh. Ajay Agrawal, Additional Director, CPCB suggested that for the purpose of Post EC monitoring, the IAs shall themselves come up with ideas to strengthen the same.
7. Industry Associations shared their experiences and requested for time to come up with suggestive models for a functional structure towards involvement of IAs in the monitoring and compliance framework.
8. Chairman concluded the meeting with following outcome :

- a. Industry Association may brainstorm amongst themselves / their members on the above issues and may come up with a self-sustaining model towards involvement of IA's in monitoring mechanism. The method of the same may also be suggested.
- b. The financial logistics may be worked out amongst the IAs and its members to come up with industry agnostic self-sustaining funding mechanism.
- c. International best practices, adopted by different countries in this context may be studied so that the same may be suitably incorporated.
- d. Their role is to encourage the industries towards better compliance by prompting the laggards to achieve higher compliance.
- e. Central Processing Centre (CPC) in the ministry is coming up with modalities where compliance status will be visible. IAs can be integrated in the system and can take up their role on the basis of available information at CPC portal regarding the non-compliance and share the report and other actions with the government through the same digital portal.
- f. The IAs may be statutorily empowered for their involvement in monitoring mechanism.
- g. Associations can define their own role to enforce the compliance of EC Conditions as part the suggestive expected scheme.
- h. Considering the stringent timelines, the response is expected at the earliest.

The meeting ended with the vote of thanks to the Chair.

List of participants for the meeting to review the role of industrial associations under the ambit of three-tier monitoring mechanism are as follow :

Sl. No.	Name	Designation
MOEFCC		
1	Shri R. P. Gupta	Secretary (EF & CC)
2	Shri Ravi Agarwal	Additional Secretary (AS)
3	Ms. Geeta Menon	Joint Secretary
4	Dr. Shruti Rai Bhardwaj	Additional Director, Monitoring Cell
5	Shri Manoj Kumar Azad	RI, Monitoring Cell
6	Ms. Pinky Taneja	Consultant, Monitoring Cell
CPCB		
7	Shri Ajay Agarwal	Additional Director, CPCB
NPC		
8	Dr. Shukla Pal Maitra	Director
QCI		
9	Shri A. K. Jha	Director
10	Dr. Pawan Kumar Singh	QCI
11	Sh. Jagminder Kataria	Deputy Director QCI-NABET
12	Ms. Manila Talwar	QCI-NABET
13	Ms. Prachi Gupta	QCI-NABET
CSIR-NEERI		
14	Sunayana	Senior Scientist
INDUSTRIAL ASSOCIATIONS		
15	Development Council for Pulp Paper & Allied Industries - Central Pulp & Paper Research Institute	
16	Federation of Indian Mineral Industries	
17	Automotive Component Manufacturers Association of India	
18	National Council for Cement and Building Materials	
19	Pesticides Manufacturers & Formulators Association of India	
20	Ship Recycling Industries Association	
21	Electronic Industries Association of India	
22	Builders Association of India	
23	ONGC Manglore Petro Chemical Limited	
24	Indian Finished Leather Manufacturers and Exporters Association	
25	Indian Leather Technologists' Association	
26	Indian Electrical & Electronics Manufacturers Association	
27	National Federation of Cooperative Sugar Factories Limited	
28	All India Distillers Association	
29	Eastern Zone Mining Association	

INDIAN LEATHER SECTOR PUSHES FOR SELF-SUFFICIENCY



The MSME Ministry plans to increase the leather sector's contribution to India's GDP in the next five years. They have their sights set on a 10% exports increase and. The plan is to increase the number of jobs generated in the sector by 5,000,000.

Gadkari was addressing a gathering at CSIR-CLRI, Chennai, after virtually inaugurating the additional capacity of one million litre a day and Zero Liquid Discharge system of the Common Effluent Treatment Plant at Ranipet Tannery Effluent Treatment Company Ltd (RANITEC), in Ranipet.

To achieve the goal of Indian self-sufficiency, it is important to create more employment opportunities. The minister urged the leather industry to work with him to achieve this goal. He also urged the industry to create more auxiliary industries in rural areas to encourage young entrepreneurs and create more jobs to reverse the trend of rural population migrating to cities.

Thanking the Council of Leather Exports and Central Leather Research Institute the Minister urged the institutions to encourage the leather industry clusters in other parts of the country also to adopt eco-friendly practices so as to reduce the environmental pollutants generated by the leather sector.

(Source : Leather International – 18/02/2021)

LEATHER BAGS AND SHOE PRICES MAY RISE

Prices of premium and branded leather shoes and bags may go up by up to 5% next fiscal after finance minister Nirmala Sitharaman imposed import duty on raw and finished leather by 10%. This will also impact exports, said companies.



"Prices will definitely increase by a minimum of 5% in wholesale and in retail by on average 3%. The move will also make domestic manufacturers uncompetitive in the global market where we have strongly positioned ourselves," said Dilip Kapur, Founder and President of Hide sign the Pondicherry-based premium leather goods maker. Kapur said that the industry has been asking the government to allow duty free imports of raw materials and to tax import of finished products. "This will encourage the manufacturer of labour-intensive finished goods as it will make Made in India goods competitive, both in the domestic market and for exports," he said. The basic customs duty of 10 per cent has been put on wet blue chrome tanned leather, crust leather, finished leather of all kinds, including splits and sides from nil duty.

The exact quantum of price increase will have to be calculated as it will have to be seen if the markets can absorb it, said industry executives. UK based shoe manufacturers and retailer Clarks's India executive director and CEO, N Mohan said this new duty might lead to an increase in costs especially for high end brands that import semi-finished and finished leathers. "However, it will also put pressure on improving productivity and other efficiencies. While we do welcome the intention of being self-reliant, we have to work together with manufacturers to make sure the overall efficiencies go up and this cost gets mitigated," he said. India was dependent on imported leather from South America, New Zealand, Brazil, and Africa which was known for its quality and finish. "European and US buyers have over the years been guiding us on purchase of leather.

The demand for these hi-end shoes, handbags and garments in the domestic market has also started picking up. With leather accounting to 50% of the raw material in shoes and bags the prices will go up by over 5%," said Kanpur based Mukhtarul Amin chairman and group MD of Superhouse Group who sells in the domestic market under the Allen Cooper brand and also

manufacturers leather products for German luxury fashion house Hugo Boss and America's Michael Kors India annually exports leather products worth \$5 billion and imports raw and finished leather worth \$ 0.5 billion. Footwear export accounts for 51.77% share during April 2019 to March 2020 worth \$2.6 billion. Indian raw material resources are inadequate and hence the import duty will hamper exports of finished products from India said, Sanjay Leekha, vice chairman of the Council for Leather Exports said. He added that finished product prices will also increase marginally.

India is the second largest exporter of leather garments and fifth largest exporter of leather goods and accessories in the world. Companies may start looking at other categories of non-leather footwear manufacturing for exports, said Mohan. "The world is looking at India as we specialise in leather footwear. We need to look at ways and means of being competitive," he said. The industry is also requesting the government to announce production/ employment linked incentives for footwear and leather products, as it is one of the top employment sectors of the world. According to Invest India, the Leather industry has the tendency to generate 250 jobs for every \$0.2 million investment. "We may soon have Chinese products flooding the Indian market since finished leather products attract only 15% import duty," said Kapur.

(Source : Economic Times – 03/02/2021)

CAN MADE IN AFRICA TRANSFORM THE CONTINENT'S LEATHER INDUSTRY?



Winston Leather, a Nigerian leather brand, celebrated the biggest sales in its 30 years in business last June. The boost was thanks to a tweet in March from fashion historian Shelby Christie highlighting how its tannery, based in Kano, Nigeria, supplies leather to luxury fashion houses such as Louis Vuitton and Ralph Lauren.

The tweet resurfaced in June and prompted a flood of orders as the fashion industry sought new sourcing opportunities that supported Black businesses. And the single tweet put right some misconceptions about the quality of African leather goods.

"It was like a stamp of approval," says Winston Udeagha of Winston Leather, which is a subsidiary of Udeagha's wonderfully titled parent company, God's Little Tannery. "What people don't know is that much of the leather used around the world actually originates in Africa," he notes. "For them, if luxury fashion houses were using our leather in their finished goods then they could buy purses and shoes from us and trust our quality." Udeagha has been in the leather manufacturing business for decades, but his company only decided to produce its own brand leather accessories in 2018 when he realised the potential of a growing market of fashion consumers within and outside Africa who were keen to buy African.

For a long time, African leather has remained unappreciated by the consumer despite a shift in consumer consciousness and pressure for greater transparency in every aspect of the fashion business. EU laws stipulate that the country of origin of finished goods is the country where the final production process occurs. This has enabled luxury fashion houses that source raw leather from Africa, and even begin the production process there, to tag their products as, for example, Made in Italy. This practice has helped European manufacturers to avoid using a Made in Africa tag, a process that has kept Made in Africa leather goods under the radar and struggling to build an image for quality and excellence, in Africa itself as much as abroad.

Underfunded but determined, African designers are leaning on Africa's vast resources and capacity for sustainable fashion to change the perception of African leather and promote it to a broader market. While leather is losing ground with many sustainability-focused designers around the world, African-based production offers a more palatable solution. Problems like animal cruelty, wastewater and use of harsh chemicals in the tanning process are alleviated by underfarming, reduced consumption practices that encourage reuse, and fairer livestock farming with provision of meat as primary focus, and then by abattoirs that help reduce shipping emissions. Initiatives like the Green Tanning Initiative and metal-free leather in Ethiopia and other East African countries are also working to educate tanners on less toxic methods of tanning and dyeing leather and push for more environmentally friendly policies in Africa's leather production.

The best quality African leather has tended to go to export markets. In response, some of the most interesting African leather goods companies have learned to adapt and use local material resources to the full. “We focused on what we could do better,” says NardosTamirat, co-founder of Ethiopia-based Tibeb Leather Works. “We knew we were in a different market and our value proposition was different. For us, that is our leather and traditional Ethiopian designs.”

The company uses leather that would otherwise be discarded as flawed by many premium houses to create leather purses and other accessories. By keeping the leather as natural as possible with its flawed skin, Tamirat believes Tibeb stays true to its Ethiopian origins. Ethiopia-based Tibeb Leather Works uses leather that would otherwise be discarded. © Tibeb Leather Works.

Tamirat’s strategy is shared by Mark Stephenson, managing director of Sandstorm Kenya. “African leather designers and manufacturers don’t have the resources to efficiently mass produce like, say, China can. The technology isn’t there yet in Africa. And so for Sandstorm, the question is how can we use technology to create more jobs for artisans and tanners and optimise value within Africa using slow fashion,” he says.

Basic infrastructure, such as the best machinery for drying, is lacking in parts of Africa. Much of the leather produced in Africa is exported out of the continent to be finished and then imported back as finished goods. The cumulative effect of this is to leave the industry in a state of underdevelopment.

Frustrations abound. “When I started my business, I researched about African leather because I wanted my shoes to celebrate African artisanship as much as possible,” says Nigerian designer, Tina A, founder of Kkerelé. “I found that the leather sold in Mushin market, where most accessory designers in Lagos are based, is imported from Europe. This didn’t make sense to me considering the tanneries we have in Africa and our cattle farming.”

Tibeb Leather Works co-founder NardosTamirat says keeping the skin as natural as possible reflects its Ethiopian origins. © Tibeb Leather Works. A problem for African designers is that tanneries tailor their business policies to fit the demands of their largest buyers, which are often Western businesses.

This leads to high minimum order quantities, shutting out African designers with their much smaller orders. Tamirat explains that in its first few years of business, Tibeb relied on scraps from

the tanneries because the company couldn’t afford to buy in bulk in the way that Ethiopian tanners preferred.

African designers have the potential to play a central role in developing a new image of quality for Made in Africa. Tibeb Leather Works is partnering with businesses in Ethiopia to create educational materials that help young designers understand Ethiopia’s design history and lean into designing using materials sourced in Africa and sourced sustainably. Designers like Nigeria’s Femi Olayebi of Femi Handbags are also creating initiatives, such as Lagos Leather Fair, to connect tanners to designers and buying groups where small designers can band together and buy in bulk from tanneries with high minimum order quantities.

Meanwhile, Nigeria’s Winston Leather has already responded to the needs of smaller designers by evolving a business model enabling designers to buy as little as 10 square feet of leather hide rather than the minimum quantity of 20,000 square feet previously required.

The potential is there, but plenty of work remains to be done. “To grow Africa’s leather industry, tanners and manufacturers cannot focus solely on getting Western designers and luxury houses to use their leather,” says Stephenson of Sandstorm Kenya, who has sat on Kenya’s Leather Development Council.

“They must also make themselves accessible to African designers and brands who can tell and celebrate an authentic story of African artisanship from cattle, sheep and goat origins to the finished leather goods.”

Leather industry hits back



appearing in the magazine and then becoming available free of charge on a dedicated website.

The essays, 15 in total, are still available under an open-source agreement, for journalists, universities, companies and consumers all over the world to use. Starting in early 2021, World Leather will begin updating the essays. Nothing to Hide essays explain the science, technology and ecology that underpin the modern leather industry. All contributors are respected authorities in industry and academia. Since the launch of the series, industry bodies and research institutions across the globe have cited the Nothing To Hide essays frequently in their work.

This is a world in which nothing can be hidden, so organisations that want to prosper have to make sure they have nothing to hide. The phrase comes from Greg Page, the retired chief executive of Cargill, in a speech about the company's main area of business, producing and marketing food. It can just as easily apply to the leather industry.

Incorrect and obsolete information about the leather industry continues to be broadcast on television and radio, and published in newspapers, magazines and reports. Campaign groups, often with anti-leather agendas, have used this negative material to further damage perceptions of the leather industry. The Nothing to Hide collection is designed to combat this head-on by sharing accurate, up-to-date, easy-to-access information and explanations of how and why tanners and their upstream suppliers work the way they do. The best in the industry have nothing to hide; they have much to be proud of, as this series proves.

Nothing to Hide will continue to serve as a reservoir of facts and knowledge that the entire global leather industry will be able to draw on when the need arises to respond objectively to criticism and to increase consumers' awareness of the beauty, renewability, value and circularity of leather.

(Source : Leatherbiz.com – 29/01/2021)

TRAINING WORKSHOP ON LEATHER GOODS BEGINS AT LANGEI INTERNATIONAL



A year-long 'Training workshop on leather goods' organised by Footwear Design and Development Institute, Noida under the Ministry of Commerce and Industry, began from 18th March'2021 at Langei International in Nongpok Sanjenbam, Imphal East district. Addressing the programme, State Coordinator, K Bijaya stated that the training programme was organised to provide a platform to generate incomes for the unemployed women of the State.

She mentioned that for the first batch of the training programme, training for 50 trainees began from first day. The 2nd batch will begin after 15 days and so on. The training programme will continue for a year. The trainees will be provided stipend during their training and the facility to employ as an instructor after the completion of their training will also be available, she added.

Footwear Design and Development Institute, Assistant Manager, Amit Tiwari also assured that he would strive to work out a way to provide raw materials for the manufacture of leather products from Kolkata. The programme was also attended by KVIC, Director, S Dewan; Langei village, founder, Telem Arunkumar and FDDI, Project Coordinator, Bishnu Das.

(The Sangai Express – 18/03/2021)

CLE IS ANNOUNCING 4 MORE VIRTUAL BUYER SELLER MEETS (VBSMS) DURING 2020-21 UNDER MAI SCHEME



Keeping in view the overwhelming response received from members for participation in 3 Virtual BSMs recently notified by CLE and also considering the market potential, we are glad to announce the following 4 more Virtual Buyer Seller Meets with the funding support of Government of India under Market Access Initiative (MAI) Scheme during 2020-21. For details please click browse the following link :-

<https://leatherindia.org/cle-is-announcing-4-more-virtual-buyer-seller-meets-vbsms-during-2020-21-under-mai-scheme/>



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News Release from the IULTCS

Ethiopia to Host Global Leather Industry Events in 2021

As the world experiences the full impact of COVID-19 the global leather industry looks forward to the time when we have the opportunity to meet again, share our knowledge and renew old friendships. We also look towards countries where we are seeing investment in the industry and the enthusiasm to embrace innovation and adopt new technologies. The launch of “9 Days of Leather” in Addis Ababa, Ethiopia couldn’t be more pertinent.

Events will commence on 01 November 2021 with the 5th World Leather Congress (WLC) organised by the International Council of Tanners and COMESA LLPI with the theme ‘Leather – a Gift of Nature’.

Delegates can then move on to the major leather science and technology event the XXXVI IULTCS Congress which will be held from 03-05 November 2021 and will be exploring the theme of ‘Greening the Leather Value Chain’. The call for Congress abstracts will open shortly and abstracts will be able to be uploaded to the website.

The Congress venue will be the Ethiopian Skylight Hotel, close to the International airport in Addis Ababa.

The final three days, 06-09 November 2021 will then be dedicated to the All Africa Leather Fair (AALF) - Africa’s largest international exhibition dedicated to leather, accessories, components, footwear, leather goods, automotive and furniture.

Prof. Mwinyi Mwinyihija, IULTCS Congress President and Executive Director Africa Leather and Leather Products Institute

(ALLPI) extends a warm welcome to leather industry friends from around the world as Africa opens the doors in 2021.

ERRETRE and Leather Naturally Support the IULTCS Young Leather Scientist Grant Programme 2021

The Executive Committee of the IULTCS is pleased to announce the 2021 grants to be awarded to three young scientists, under the age of 35, for research projects in the categories: Leather Research, Machinery / Equipment and Sustainability to be conducted at a recognized institution in 2021.

Italy based leather technology provider and machinery manufacturer, ERRETRE S.p.a., confirmed support of the 2021 YLSG programme of IULTCS in the category Machinery/ Equipment. The grant is to encourage young leather students and scientists to run a leather research project in the areas of development of machines for leather processing, automation, chemical/physical analysis and environmental equipment. Mr Adriano Peruzzi from Erretre remarks: “Our company supports leather education and we strongly believe our sector needs young motivated people to implement innovation and face the challenges the industry is face during the coming years. Erretre is again proud to award one young scientist for the work on a remarkable research project on Machinery/Equipment and for the contribution to the leather industry.”

“Leather naturally is proud to sponsor the Professor Mike Redwood Sustainability/Environment grant for another two years” said Egbert Dijkers, Chairperson. “With Leather Naturally’s focus on providing education to designers, brands and consumers, it was a logical step to sponsor this award and honour our founder Professor Mike Redwood.” Who is quoted

as saying: "I wrote my first sustainability report in 1993 and those companies who have embraced the subject positively since then have all benefited from the solid science-based foundation it establishes when fighting competitive materials on environmental grounds. To pursue sustainability as an ongoing objective stimulates the leather industry to be dynamic and innovative. I am immensely honoured to be named in this grant and hope that it will allow candidates to feel free to challenge the industry with creative and unexpected ideas".

2021 will be the seventh year of the grant, and IULTCS will provide the monetary sponsorship for a single sum of □ 1,500 grant to Basic Research; ERRETRE will sponsor the □ 1,000 grant for Machinery/Equipment and Leather Naturally the □ 1,000 sponsorship for the Professor Mike Redwood grant on Sustainability/Environmental.

Michael Meyer, Chairman of the International Union of Research Commission (IUR) of IULTCS and Research Director at Freiberg (Germany) based FILK Leather Institute expressing his appreciation of the engagement: "We very much value the contribution of ERRETRE and Leather Naturally to our YLSG programme. It is a vital instrument to encourage young leather scientists to acquire awareness and become more connected to the established research community of our industry. We have seen the programme growing stronger over the past years. Last year's edition brought up numerous, ambitious applications to step forward with innovative ideas and sustainable technologies."

Application submission for the 2021 YLSG programme will open in September and Luis Zugno, President of IULTCS, asks young research talents of the industry to file courageous project ideas.

Details of the eligibility requirements are available on the IULTCS website (<http://www.iultcs.org/research-iur.php>).

The IULTCS requests that readers of this announcement forward the information to those institutions and individuals who could benefit from the award.

IULTCS Announces Two New Testing Commission Convenors

At the recent virtual meeting of the IULTCS leather test method commissions two of the three Convenors were replaced -The IUP (Physical) and IUF (Fastness) Commissions have new Convenors:

Jacqueline Glasspool was appointed as the new Convenor of the IUP Commission (and also of the Working Group 2 (WG2) of the European Committee for Standardisation CEN/TC 289 - Leather). Jackie is the group quality manager at SATRA Technology Centre Ltd in the United Kingdom. She replaces Mike Wilson who has recently retired.

Gustavo Defeo was appointed as the new Convenor of the IUF Commission (and also of the Working Group 3 (WG3) of the European Committee for Standardisation CEN/TC 289 - Leather). Gustavo is founder and director of Ars Tinctoria srl in Italy. He replaces Campbell Page who has been the IUF Convenor since 1994.

The Convenors of the IU Commissions are automatically also members of the IULTCS Executive Committee, so the IULTCS EC welcomes these new members and also give their thanks and gratitude for the many years of professionalism and dedicated service given by Mike Wilson and Campbell Page.

Acknowledgement : Christine Powley-Williams (Email : christine.powley-williams@satra.com)
Christine Anscombe (Email : chris.anscombe@satra.com)

Do You Wonder ?

Dr. Buddhadeb Chattopadhyay

Former Principal of Govt. College of Engineering & Leather Technology, Kolkata
& former Principal, MCKV Institute of Engineering, Liluah, Howrah, W. B.



If, you read the Special Theory of Relativity, you know the Lorentz's Transformation and you also know the relationship between the moving mass (m) and the rest mass (m'). True that mass is an amount of matter but relativity tells us that it is a function of velocity (v) as well. Mass is essentially can be treated as constant so long as v remains much less less than c for any particle.

Now, there is another out-of-box treatment. Let us consider that there exist a Free Particle in the universe. The necessary and sufficient condition for the existence of a free particle is its potential energy should be zero.

So, the total energy E of the particle is due to kinetic energy T . Therefore, for such a particle $E = T$

We have already seen that $dT/dt = v.F$

So, we may write $dE/dt = v.F$

By substituting the relationship $E = mc^2$ in the LHS and $F = d(mv)/dt$ in RHS, we can re-write the above equation as

$c^2 dm/dt = v.d(mv)/dt$ [Since c is the velocity of light in vacuum and is a constant]

Multiplying both sides of the equation by $2m$ we get,
 $2m.c^2 = 2mv. d(mv)/dt$

Now by integrating both sides with respect to t , we have

$m^2.c^2 = m^2.v^2 + k$ [where k = integration constant]

Let's find out what is k . By defining the rest mass of the particle as m' , it comes as $m = m'$, when $v = 0$

By putting this relationship in the above equation, we get
 $m'^2.c^2 = 0 + k$, or $k = m'^2.c^2$.

Now, we can say that

$$m^2.c^2 = m^2.v^2 + m'^2.c^2 \text{ \{since } k = m'^2.c^2\}}$$

Now, here we go: -

$$m^2.[c^2 - v^2] = m'^2.c^2$$

$$\text{or, } m^2 = (m'.c^2)/[c^2 - v^2]$$

By dividing both numerator and denominator by c^2 we can obtain,

$$m^2 = m'^2/[1 - (v^2/c^2)]$$

$$\text{Therefore, } m = m'/[1 - (v^2/c^2)]^{1/2}$$

This give rise to some interesting consequences:

a) Can any particle be having some mass move at the speed of light? The answer is no. For, if, $v = c$ then precisely the moving mass (m) of the particle becomes infinite. That becomes a limiting speed. Yes, velocity of light in vacuum is the upper limiting speed.

b) How does the mass increase? The energy is converted into mass. As the speed increases there is an equivalent increase in kinetic energy and thus for a free particle total energy too.

c) Does this relationship affect Newton's law of motion? Under ordinary condition, day-to-day experience it doesn't affect but it affects when the v approaches c .

d) How then Newton's law of motion should be modified to satisfy all conditions? Simply replace m with $m'/[1 - (v^2/c^2)]^{1/2}$. For example $F = m'/[1 - (v^2/c^2)]^{1/2}.a$.

e) Photon is also a light particle. How does photon move at the speed of the light? This is a god question. Photon only can



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move at the speed of light because its rest mass $m' = 0$ and therefore, in this case the moving mass (m) becomes $0/0$. It is an undefined quantity, not infinity.

If, $v > c$ then the moving mass (m) becomes imaginary. How can a real particle have an imaginary mass?

[Source: Feynman's Lecture in Physics, Vol I]

f) Can a real particle move at a speed higher than the speed of light? The answer is no. Have a look at the equation again.

Read and Let Read :-

JILTA



This article was originally published in Vol.-9, No.-12, December' 1961 issue of JILTA.

A STUDY OF THE SOLUBLE AND INSOLUBLE SALTS OF SOME VEGETABLE TANNING MATERIALS *

PART—I.

N. N. Guha

INTRODUCTION

I. Acids & Salts in Vegetable Tanning

The importance of correct control of the acid and salt contents of vegetable tanning liquors is now well established. Acidity and salt content are intimately connected in vegetable tanning and although the present work is mainly concerned with the salts of vegetable tanning materials, some consideration will also be given to their acidity.

In 1911 Wood, Sand and Law¹ introduced the use of hydrogen ion activity measurement as an index of the effective acidity of tan liquors and during the 1920's, the use of pH in tan yard control became firmly established. Several papers from the British Leather Manufacturers' Research Association during this period clearly point out the significance of pH Control.

The general importance of salts in suppressing the acid plumping of hide was known at that time from the work of Procter and others.² In 1926, Jordan Lloyd³ discussed this effect in relation to the fiber weave, rate of penetration of tan and lightening of the colour of vegetable tanned leather. For more than ten years, however, the main interest still centred on pH control and acidity and little consideration was paid to the salts. This may have been related to the fact that there was no reliable routine procedure for the determination of salts in vegetable tanning liquors during this period. The interest in pH and acidity determination, however, had received the stimulus of the introduction of the glass electrode, which was admirably suited to such measurements in the strongly coloured tan solutions and replaced the less convenient hydrogen electrode and the unreliable indicator methods. In 1938, the conductimetric titration method was devised by Davies and Reghellato⁴ for the determination of salts and acids. The method was applied to the determination of salts and acids in tan liquors also, but was found unsuitable as the method did not titrate salts of strong acids in tan liquors.

The first really useful procedure for the routine determination of total salts in tan liquors was the ion-exchange resin method, in conjunction with potentiometric titration, introduced by Cheshire, Brown and Holmes, in 1941⁵. In contrast the determination of acidity using the glass electrode was in common use during the period 1927-28^{6, 7} and the method was accepted as an official one in 1933 by S.L.T.C. Committee.⁸

* Based on author's introductory chapter of the thesis which was awarded M.Sc. degree of Leeds University.

The sulphated ash method was also in use at this time and discrepancies were found between the results by this method and the ion-exchange procedure. Later studies with newer ion-exchange resins overcome this difficulty to a great extent ^{9, 10}.

It was found necessary to distinguish between salts of weak acids and salts of strong acids. The alkalinity of ash method was found useful for the determination of salts of weak acids and was used for instance by Burton¹¹. Serious differences were found between the figures for salts of weak acids obtained by this procedure and by the conductimetric method developed by Balfe and Airs.¹² It seems to be generally accepted that the very low figures for salts of weak acids quoted by Balfe for vegetable tanning liquors and extracts are erroneous.

By this time, much sounder appreciation of the balancing effects of salts and acids in vegetable tanning had been achieved and henceforth the determinations of both quantities became standard procedure. It is worth noting that to-day figures for acid and salt contents of vegetable tanning extracts are specified by the extract manufacturers together with tans and non-tans etc.

Interest in these topics was occasioned not only by the need to control existing processes but in the development of new ones. In particular, during the last war, a shortage of certain tanning materials stimulated work designed to replace in by materials more easily available in Great Britain. In order to substitute one tanning material for another, an adjustment of the acid and salt contents of the available material was required so that they corresponded closely with those of the material which was being replaced. Substitutes for such valuable materials as chestnut and gambier could, by these adjustments, be made from mimosa, which was still available in quantity.

The simulation of the properties of one tanning material by the alteration of acid and salt contents of another obviously has its limitations, as the character of any particular material depends also on other specific and probably more obscure factors. This was realised by Okell¹⁴ who, in 1945, in a general review of the effects of acids and salts in vegetable tanning, discussed the use of mimosa as a substitute for chestnut. Although by suitable additions of acids and salts, mimosa could be made to bear an analytical resemblance to sumac for instance, the leather produced would not be as resistant to the action of light as sumac tanned leather; the mimosa retained its catechol nature in this respect.

The detailed effects of acids and salts on various aspects of tanning and on the resulting leather have received more recent extensive study ^{15, 16}.

It is probable that there is still more to be learned about this subject which is certainly complex and some of the published reports seems contradictory.

The following points, however, seem to be well established:—

(1) It is important to control the absolute concentrations of acid and salts as well as salt/acid ratio. The optimum figures for these quantities vary considerably from liquor to liquor and from tannage to tannage.

(2) It is better to determine the separate amounts of salts of weak acids and salts of strong acids, as these may have different effects. Both types of salt will tend to suppress acid plumping due to the Donnan effect and both may have lyotropic effects. But only the salts of weak acids will have a buffering action tending to stabilise the pH of a liquor. Burton prefers to use the salts/acid ratio as a measure of astringency rather than the total salts/acid ratio.

(3) It is preferable to determine only the carboxylic acidity and not to include the phenolic groups which do not act effectively as acids in the pH range of normal vegetable tanning.

(4) In general, a high salt/acid ratio aids penetration of the tans and tends to give a leather which is rather soft and of good colour. A low salt/acid ratio on the other hand tends to give a firmer leather.

(5) Some results indicate that an increase in salt content tends to give a leather of slightly increased shrinkage temperature whereas a lowering of the pH reduces the shrinkage temperature. The degree of tannage and tanning figures may however, decrease with increased salt concentrations.

(6) Effects due to specific cations may influence the properties of the final leather specially when lyotropic phenomena occur, as was shown by Lee and Wollenberg.²⁰

Other chemical and physical effects on the final leather are to be expected although they are not easy to measure and results require careful interpretation. Nayudamma's¹⁹ results seem in part to contradict some of the statements made by other workers such as Okell¹⁴ with respect to effects of salts on the firmness of the leather. Differences in experimental technique may well account for discrepancies of this type.

There is no doubt at all, however, about the general importance of control of salt and acid figures in maintaining regularity of the physical properties of vegetable tanned leather, as was emphasised by Benskin.¹⁵

II. Soluble and Insoluble Acids and Salts in the Raw Tanning Materials

The work on acids and salts which has so far been mentioned has been concerned with the occurrence of those materials in vegetable tanning extracts and liquors, and no attention has been paid to the original raw tanning materials. Infact, very little work indeed has been published on this aspect. This is understandable as the 'Tanner' is more concerned with the characteristics of the liquors as he uses them rather than with the properties of their raw materials. A possible general exception to this may of course be found in the layering process in which the raw materials are utilised directly, but this is not a common process to-day. Sumac, however, is still used largely as an infusion of the leaves and the analysis of the material itself is of the utmost importance.

The distinction between extracts and the materials from which they are made is of interest as there may well be considerable differences in the acid and salt characteristics in the two cases.



The analysis of extracts or liquors obviously gives no clue as to the possible presence of water insoluble acids and salts which may be characteristic of the original raw material. This is not the only aspect worth considering however, as the literature gives virtually no information regarding the extent to which even the soluble acids and salts are extracted in the usual leaching or commercial extraction procedures.

These two points viz. insoluble acids and salts and the extent of extraction of soluble acids and salts will be considered separately as their implications may be very different.

Sumac has been shown to contain a high proportion of insoluble salts by Thiry²¹. His experiments clearly demonstrate the presence in sumac of some material capable of 'neutralising' mineral acids and most of this 'neutralising' compound was insoluble in water.

The chief metallic element in the sumac ash is calcium which accounts for 83% of the alkalinity of the ash and 77% of the negative Procter Searle value. Some of the calcium may be present as calcium silicate, which would help to account for the negative Procter Searle value and perhaps for the 'neutralising'. Much of the silica is present as sand. Part of the silica is either combined with some base in the sumac, or it combines with base during the ignition.

The soluble part of the 'neutralising' compound might be expected to be carried into the leather. Sumac skiver has a considerable negative Procter Searle value, a large part of which is due to some insoluble compound probably carried right into the skin by fine fragments of leaves. This insoluble compound will also protect the leather against acid just as will the soluble salts as noticed by Innes.²²

Hansakul²³ gave evidence of the presence of the insoluble salts in some of the tanning materials of mangrove species with which he conducted his experiments. He stated, "it seemed certain that fairly large quantities of salts which are insoluble under the condition of equilibrium or Procter extraction are present in almost all the materials."

It is of interest to know whether appreciable quantities of insoluble salts are present in the more widely used tanning materials such as mimosa and myrabolams, and further investigations of sumac from this point of view is also worthwhile. The presence of insoluble acids in the free form in the raw material is also a possibility but this question is rather more difficult to investigate than that of the insoluble salts where ashing procedures are obviously useful. It may be emphasised that it is virtually unknown how far these insoluble materials have potential tanning values (insoluble chebulinic acid which may occur in myrabolams may have potential tanning value) and other possibilities may occur.

The other point which requires consideration is the extraction of the soluble acids and salts. This question has been generally ignored and this is rather

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curious in view of its practical importance in vegetable tanning. This is in direct contrast to the great amount of work which has been carried out on laboratory tannin extraction. Many types of apparatus have been explored in this connection and the effects of variations of different factors such as time, temperature and ratio of water to tanning materials have been studied.^{24, 26}

It seems generally to be assumed that there is no difficulty in extraction of acids and salts from the raw materials on the laboratory scale; that the usual procedure for the extraction of tannins will also suffice for the removal of the acids and salts²⁷ and that less prolonged extractions may be used if only the latter are being determined.²⁸ The continuous four or seven hour extraction under the conditions of the official method of tanning analysis would appear to be quite adequate in general for the complete extraction of acids and salts, although this has certainly not been proved. Indeed evidence exists that for some materials, the official method is inexhaustive for salts.

Tolliday, Thompson and Forman²⁹ stated that considerable errors may exist in published results on the salt contents of tanning materials in their natural forms which have been obtained from the analysis of solutions obtained by the official method of extraction. They investigated the effect of varying the conditions of extraction of bark with water. One sample of bark was extracted by the official method using the koch extractor, while a second sample was extracted by boiling with water, with frequent decantation of the solutions during 8 hours. The analyses of these solutions are given below:—

Effect of method of extraction of bark on salt content of solution—

Method of extraction	gm. solubles/ litre	Mgm. equiv/100 gm.	
		Free acid	Salt
Official method	5.49	7.3	36.0
Continuous boiling	5.46	7.3	42.2

This showed that by maintaining the water in contact with the bark at 100°C, a considerable greater amount of salt is extracted. They criticised the official method on the ground that it did not completely extract the salts present at least for the mixture of mallet and wattle bark used in their investigation. The extraction of acids in this case was complete in the official method, but may not be so for other materials. Certainly the idea that comparatively mild extraction procedures will suffice for acid and salt determination seem quite unfounded.

Thus at the present time, it is not possible to evaluate the efficiency of any given commercial leaching or extraction process in relation to acid and salts as no laboratory method has been designed to give the absolute figures for these soluble components.

(To be continued)

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A STUDY OF THE SOLUBLE AND INSOLUBLE SALTS OF SOME VEGETABLE TANNING MATERIALS

PART—II

N. N. Guha

(Continued from December 1961 issue)

III. The Different Types of Acids and Salts

In the previous paper,¹ attention has been focussed on the occurrence of insoluble salts and possibly acids in tanning materials and on the lack of information regarding the extraction of the soluble components.

It is also important to distinguish the different types of acids and salts present in these broad categories. Many workers have investigated this problem with relation to the different types of soluble anions, although there is still much which is obscure. Many obstacles have arisen due to the very complex mixture of anions which may be present in vegetable tanning liquors and the great difficulty which is experienced in distinguishing between them.

This is most evident in the attempts which have been made to distinguish the acids and salts of non-tannins from those of the tannins. It is now clear that certain tannins, particularly pyrogallol materials, certain carboxyl groups which may be present in both the undissociated and salt forms. The early work of Cameron and McLaughlin² based on a separation of non-tans from tans by dialysis through cellophane membrane is now generally considered to be inadequate. Bickley's method³ probably offers greater possibilities due to the greater selectivity of the collagenous membranes used in his dialysis procedure, but further confirmation of his basic assumptions is required. The results obtained by Bickley's hide powder column procedure were less encouraging, but further work along these lines seems worthwhile. In view of the rapid developments in the field of ion-exchange resins, further investigations with these materials could also be fruitful.

The difficulty of distinguishing natural and tannin acids and salts is an additional complication in the analysis of tanning liquors, where even the differentiation of the total carboxylic acidity from the phenolic acidity is no easy matter.

The non-tannin acids and salts themselves are very complex mixture. Burton et al⁴ stated that natural acids may exist in the vegetable tanning liquor as gallates, lactates, acetates, butyrates, propionates, formates, uronates, pectates, oxalates, citrates, tartrates, phosphates, chlorides, sulphates and bi-sul-phites.

The analysis of such a mixture of non-tannins is by no means easy if we can separate these constituents of the tannin acids and salts is an even greater problem.



In spite of these obstacles, many investigations have been carried out on the effects of different types of anions on the vegetable tanning process. The different effects of the anions of strong and weak acids have received the most attention. One of the earliest investigations in this connection was that of Thomas and Kelly which was quoted as early as 1929, by Wilson in this well known book.⁵ They were probably the first to point out that tanning liquors acidified with organic acids give higher fixation of tan than liquors acidified with inorganic acids.

The influence of anions of different weak acids has also been investigated. Anderson and Dunn⁶ studied the effects of acetate, formate, lactate and oxalate on tan fixation and Balfe⁷ stressed that the anions differ in their affinity for fibrous proteins. Anions which have a strong tendency to fixation on fibrous proteins increase their acid uptake at given pH, diminish their swelling and promote hydrolytic changes.

The influence of different cations has however, received much less attention. It is to be expected that the cation effects will be less important than those of the anion but nevertheless they should not be ignored.

Because of the relatively small amount of interest which has been shown in the effects of different to find that there is a scarcity of analytical information in this connection. Much of the work which will be reviewed below was carried out many years ago and information relating to more recently developed methods is almost negligible.

In 1928 it was stated that the uncontrolled accumulation of sodium salts in suspender liquors is certainly undesirable and their influence on the solubility of tan is an unknown factor. It was also claimed that other inorganic materials particularly prone to cause precipitation were compounds of metals such as iron, copper, zinc and aluminium all of which had been found in sludges and liquors.⁸ The results of a simpler study were published in 1929.

Balfe⁹ continued this work with a systematic study of twelve suspender liquors in 1938 and in 1942 (Balfe and Hoppenstall).¹⁰ The ashes of the dried residues of liquors were examined for the bases present. The following were detected, Cu, Fe, Al, Mn, Zn, Ca, Sr, Mg, Na and K. The most likely sources of these bases were said to be Ca from the lime liquors and also from tanning materials; Sodium from sulphited extracts in the tan liquors, and from sodium chloride and sulphide in the lime liquors. In one case at least sodium must however have come from the tanning materials, since the tannery which supplied one particular liquor, used neither sulphited extracts nor sodium sulphide, yet that liquor contained more sodium than would correspond, as sodium chloride, with its chloride content.

Mg and K probably came mainly from the tanning materials, as they are common in substances of vegetable origin. Mn was probably derived from the

SOLUBLE & INSOLUBLE SALTS OF VEGETABLE TANNING MATERIALS

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tanning materials and Al and Zn at least partly, since they are found in plant products.

- When the proportion of Ca, Mg, Na and K determined were converted to the corresponding amounts of sulphates, the total calculated amounts of sulphates were close to the values for sulphated ash as determined. The salts present in the liquors examined were therefore almost entirely salts of Ca, Mg, Na and K. Cu, Fe, Al, Mn and Zn were present only in traces which made as insignificant contribution to the total salt contents of the liquors, though they may have specific effects even at these low concentrations.

Lee and Wollenberg¹¹ discussed the different lyotropic effects of cations and pointed out that many years ago limed hides without deliming were put into suspenders to which myrabolams were added for about ten days. There would thus be Calcium salts present and possibly some lyotropic action from the myrobolam liquor during the tanning of the hides. There was no sodium sulphide used in the lime liquors and no sulphited extracts such as are used for bleaching today would be present. They wondered to what extent the lyotropic action of Calcium salts was helping to make the hard, flexible blend which was characteristic of the old fashioned method of tanning in weak liquors for long periods.

The above workers compared the lyotropic effects of Calcium, Potassium and Sodium salts on sole leather tanning using mimosa liquor. The anions present were chloride, sulphate and bromide respectively. The experiment showed that the presence of Sodium or Calcium salts differently affected the firmness and hardness of the leathers and also the modulus of elasticity and hardness in the wet condition. If the liquors were acidified with H_2SO_4 , the Calcium salt had a greater effect than the Sodium salt and the Sodium salt a greater effect than the Potassium salt. The effects of the salts in lowering the shrinkage temperature was in the order of Calcium, Sodium and Potassium. Leathers which had been hot pitted were firmer when tanned in the presence of a strongly lyotropic salt such as Calcium Chloride, than if a salt such as Potassium Sulphate was present. This effect occurred even though the Calcium Chloride tanning liquors contained less titratable acid than the Potassium Sulphate liquor. Calcium Chloride, due to its strong lyotropic action, caused increased water absorption when the pelt was in the intanned condition. It also produced wet leathers containing a little more tanning matter but significantly less water than the leathers from the Potassium Sulphate liquors.

Cheshire¹² studied the influence of bases present in myrabolam liquor upon tannage. The bases in myrabolam liquor seemed to be capable of combination with hide substance along with the tannin. In order to discover what influence these bases had upon tannage and what influence might be expelled from the acids with which they were combined, he prepared a myrabolam liquor partly neutralised with a slight excess of precipitated chalk, with sufficient elevation of temperature to liberate the Carbon Dioxide formed. This had the advantage also of leaving in solution only two bases, Calcium and Potassium.

A base free liquor was prepared by extracting decored myrabolams with alcohol containing enough formic acid to convert the whole of the bases to their respective formates. The leather tanned in the Calcium treated liquor was yellow in colour and very soft whilst that from the base free liquor was of a red brown colour and not only hard but rigid, without any distortion or case hardening. The behaviour of the leathers subsequently placed in contact with the other type of liquor was of the greatest interest. The leather which cause as a red brown hard product from the base free liquor changed gradually during the first month, and more rapidly thereafter until the leather was as soft as the leather previously taken from the base free liquor and was considerably lightened in colour. On the other hand, the soft leather from the partly neutralised liquor changed at the same low rate into a hard, somewhat brown leather. In this process, the former leather lost 2.8 p.c. of its weight and the latter gained 3.6 p.c.

This work of Cheshire is very interesting and may point to significant effects in vegetable tanning due to the presence of cations. However, due to the very different pH values of the liquors which he used, the main effects were probably due to the higher acidity of the base-free liquor with no controlling salt concentration compared with the lower acidity of the Calcium treated liquor. These differences would tend to mask any specific cation effects although it is true that the anions present were common to both liquors.

A few analyses relating to the cations of vegetable tanning materials may be quoted.

Cheshire in 1938, analysed myrabolam extracts and found the principal mineral constituents in them.¹²

Tolliday et al¹³ and Todeschini¹⁴ analysed myrabolam extract and valonia raw tanning material respectively for the principal bases present.

The Imperial Institute¹⁵ analysed some plant ashes for suitable sources of potash. Among other samples, ashes from the wood of white chestnut and black wattle from the East African Protectorate were examined.

Many of the analytical procedures which were used above and by Balfe in the earlier work which has already been mentioned, were gravimetric and rather tedious and time consuming. The determination of Sodium and Potassium in particular is difficult especially when relatively small amounts are involved. The use of modern techniques for estimating these metals and other cations would seem to offer many advantages and might encourage further investigations on the effects of the cations in vegetable tannage.

IV. Possible Practical Aspects of Extraction Conditions

It has already been pointed out that several aspects concerned with the occurrence of acids and salts in vegetable tanning materials have been rather over-

looked. The laboratory extraction procedures certainly needed investigation in order to establish correct analytical conditions.

A more obscure question is the effect of commercial extraction or leaching conditions on the tanning properties of the liquors. This topic has been widely, if not too successfully, investigated from the point of view of tannin content. Apart from variations in extraction conditions using water only, many studies have been made on the effects of additions to the extracting medium, particularly bisulphite, and also acids^{16,17}. The extraction of tannin by non-aqueous solvents has also been investigated.¹⁸

In attempting to explain the influence of extraction conditions on tanning properties, other aspects have been considered apart from the tannin content. In particular the degree of dispersion and particle size and other physical measurements have been studied in this connection.¹⁹

No work however seems to have been carried out on the possible variations of acid and salt contents and salt/acid ratio brought about by different commercial extraction processes. If such variations occur, they might help to explain differences in tanning properties of the different extracts.

It is realised that the extraction of tanning (which will sometimes include part of the acids and salts) is likely to remain the predominant factor. However, it may be possible to achieve a complete yield of tannin and yet to obtain extracts from a single raw material with different properties, due to differences in the acid and salt contents.

It is also worth noting that any variation in acid and salt content due to extraction conditions may have to be considered in relation to experimental and small scale tannages. In certain instances, if an extract obtained in the laboratory were used for the experimental tannages, misleading results might be obtained if the salt and acid contents and salt/acid ratio were different from those of a commercial extract.

It is suggested that in view of the above possibilities, it may be worth studying different extraction conditions in relation to acids and salts, quite apart from the need to for a proved extraction procedure which is required for the analytical determination of the total acids and salts of vegetable tanning materials.

(To be continued)

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GOVT EXTENDS DUE DATE FOR FILING FY20 GST ANNUAL RETURNS TILL MARCH'31



This is the second extension given by the government. The deadline was earlier extended from December 31, 2020, to February 28.

The government on Sunday extended the deadline for filing GST annual returns for 2019-20 fiscal by a month till March 31. This is the second extension given by the government. The deadline was earlier extended from December 31, 2020, to February 28.

“In view of the difficulties expressed by the taxpayers in meeting this time limit, Government has decided to further extend the due date for furnishing of GSTR-9 and GSTR-9C for the financial year 2019-20 to March 31, 2021, with the approval of the Election Commission of India,” the Finance Ministry said in a statement.

GSTR 9 is an annual return to be filed yearly by taxpayers registered under the Goods and Services Tax (GST). It consists of details regarding the outward and inward supplies made or received under different tax heads.

GSTR-9C is a statement of reconciliation between GSTR-9 and the audited annual financial statement.

On the extension, AMRG & Associates Senior Partner Rajat Mohan said, “Even though it is a relatively small extension of 31 days but is sufficient for the tax professionals to complete the requisite filings.”

EY Tax Partner Abhishek Jain said most industry players were struggling to meet this statutory deadline and had represented to the government for an extension.

Furnishing of the annual return is mandatory only for taxpayers with aggregate annual turnover above Rs 2 crore while reconciliation statement is to be furnished only by the registered persons having aggregate turnover above Rs 5 crore.

(Source : Financial Express – 28/02/2021)

VISIONARY BUDGET OR WORSE THAN PRANAB MUKHERJEE'S?



The sad truth is that the debt-to-GDP ratio will shoot up close to 90 per cent in the coming year, and the fiscal deficit glide path does not promise to reduce it substantially any time soon,

The weeks that have passed since the Union Budget have led to an interesting shift in political discourse about the economy. The government is now being portrayed as bravely reformist. To what extent should this rhetorical adjustment give us hope for a new era of reforms?

The first and important point to note is that there is much in the fine print of the Budget that is, indeed, worth celebrating and a step forward.

The promise of a roadmap for privatisation of non-'essential' public sector units is, in spite of the serial disinvestment failures of the past years, a major step forward.

The government has after all now committed in Parliament to a path of privatisation, and can be held to account.

The virtues of honesty and transparency are also being earned. In spite of the fact that this Budget was forced to declare a fiscal deficit for the ongoing year of 9.5 per cent of gross domestic product, and also that the future path of the fiscal deficit would be extremely gentle — giving it six years to reach

4.5 per cent of GDP, not even the legally mandated target of 3 per cent — it has, nevertheless, not spooked the bond markets. We can debate about why this is the case. There is a negative reason, namely that it has instructed the Reserve Bank of India to ensure through direct and indirect purchases that yields do not go out of control.

This is another reminder that the RBI should no longer serve as the debt management office of the government, since that forces it to identify itself too closely with the goals and aims of fiscal policy.

But there is a positive reason too. For the first time since before the last financial crisis, the numbers in the Budget can be seen as being broadly trustworthy

Not all off-Budget borrowing and contingent liabilities have been included in the fiscal deficit numbers, but just bringing the Food Corporation of India above the line is a sufficiently big step forward towards normalcy as to wipe out many past sins when it comes to data obfuscation.

Markets and ratings agencies have thus held off from excessively stringent criticism of the magnitude of the government borrowing programme, reasoning that at least we know now approximately what size it will be.

Others have praised the government — and, indeed, it has praised itself — for its decision on how to spend much of this extra borrowing.

The government has doubled down on its decision to prioritise capital formation by the public sector.

Now the fact is that this strategy has not so far paid off for the government, in spite of it having been in every Budget for the past few years.

Private sector investment remains subdued. The fact is that reality is bearing out basic economic theory: Public spending and deficits are crowding out private investment.

The government's own fresh answer to the problem of private investment may not work out, but is at least worth trying.

It is relying on, first, a revival in the banking sector with the construction of a bad bank; second, incentivising private capital

flows into frontier sectors and infrastructure through regulatory changes and the creation of a new blended finance development institution; and third, through 'asset monetisation' of existing State resources.

All these strategies are risky and painfully dependent on how they are implemented — which is not this bureaucrat-dominated government's strong suit.

A bad bank will run up against the same concerns about haircuts that have prevented state-run banks from solving the non-performing asset problem for themselves.

A development finance institution is a much better idea, one worth trying — indeed, one that this writer has argued for on several occasions.

But if it becomes subject to bureaucratic capture and the Central Vigilance Commission/Central Information Commission/Central Bureau of Investigation complex — in other words, if it is less than completely professional — it will not work as hoped either.

And finally, asset monetisation is a short-cut around real privatisation, and as a mechanism for infrastructure finance depends too greatly on good sense in the government as well as on politicians, avoiding the temptation to build white elephants like high-speed rail.

The nature of the government's big bet is thus making itself clear. It hopes to gain a few years' grace from the capital markets and ratings agencies, during which it will borrow frantically to fund infrastructure.

It hopes that this infrastructure will thus, in turn, lead to enhanced private sector investment, funded by freed-up domestic capital or new international fund flows.

Growth will then return to the economy, which will swell the denominator of the debt-to-GDP ratio, and send it back downwards towards reasonable levels.

For the sad truth is that the debt-to-GDP ratio will shoot up close to 90 per cent in the coming year, and the fiscal deficit glide path does not promise to reduce it substantially any time soon.

A recent report from the Institute of International Finance argues that 'wider deficits than originally planned' can be

managed in that they will retain stability in the debt-to-GDP ratio — it won't explode, but it won't come down to recent manageable levels, either.

But such a high, Latin American, level of debt-to-GDP will, it points out, allows 'for barely any manoeuvre room under future shocks'.

In other words, we had better pray that no 'taper tantrum' hits us any time soon, the way it did in 2013 after Pranab Mukherjee's failure to manage the deficit in the early 2010s.

If the government's bet pays off, this will be remembered as a visionary Budget, comparable to the best of its predecessors.

If the bet does not, then I fear this Budget will be put in a bucket with Pranab Mukherjee's worst endeavours, as destabilising the macro-economy sufficiently to expose India to threats of a crisis.

Let's hope for India's sake the bet works out.

(Source : Business Standard – 03/03/2021)

INDIA'S GROWTH STORY IS OVER



You can make all the speeches you want, you cannot argue against 39 straight months of slowing. We have entered the 13th consecutive quarter of economic slowdown in India.

Gross Domestic Product, meaning the total value of services and goods produced in this country in the last 12 months, shrunk in 2020-2021 against 2019-2020.

We made less than we did the previous year. To return to where we were in January 2020, it will take perhaps another year. Perhaps longer, we do not know.

The problem did not begin with Covid; it existed much before that. Growth began declining from January 2018 and has declined sequentially, meaning every quarter since then.

The government has tried to tweak some of the numbers, but to no avail. It is sequential decline over three years. The India growth story is over and has been over for a few years now.

You can make all the speeches you want, you cannot argue against 39 straight months of slowing. Speaking loudly of competing with China and America, but then falling behind even Bangladesh's per capita GDP does not inspire confidence.

The fact is that even without the lockdown we were in crisis, a word that is used loosely but can be said to be accurate here. The government has no idea why the economy began to stall from January 2018.

There are theories from the outside, but they are not discussed or debated in government — who will tell the King that his rule is incompetent? Nobody, unless they want to lose their head (or at least their job) and so we continue to bumble on, along the same path that has brought us to this disaster.

The signs of our decay are all around us. Work that has left China because of Trump's trade war and Covid has not come to India but to Vietnam and Bangladesh.

Our neighbour has crept ahead of us in per capita GDP because its exports (powered by high-labour garments manufacturing) are growing while ours have not grown since 2014. We have six years of zero growth in exports.

It is also ahead because it has much higher participation of women in the labour force. In India, the patriarchy is more concerned about who Indians marry rather than why they are not working.

India is the most dangerous place for women in the world. According to the Thomson Reuters Foundation World's Most Dangerous Countries For Women, we were at fourth place in 2011 and then fell to last place in 2018, where presumably we remain.

The low participation of women in the workforce has many complex reasons, but the failure of the State and indeed the inability of this current government to stop the slide further, is also responsible. We have more of the same to look forward

to in 2021. We will not see the economy pick up, but we will see more bombast from the government about how well we are doing.

The enormous hole in the economy that was created in the first quarter of last year (April-June) because of the lockdown will have been filled over the last few months. When results for the same quarter year on year appear sometime in the middle of 2021, Modi will exclaim that we are the world's fastest growing economy and pretend that the 25% increase is not just the filling up of a hole he himself created but some miracle he has delivered to the Indian economy.

The Economist reported that Mukesh Ambani's wealth rose 350% in 2020 and Gautam Adani's rose over 700%, but we are at record unemployment, which is hovering around the 9% mark.

And it is not higher still only because many crore Indians have removed themselves from the job market. Those who are not employed and not actively looking for work are not considered unemployed.

The real figure could be approaching 15% and perhaps even higher than that. On every conceivable metric that you can think of, from bank credit growth, to automobile sale, the revelation is not only that there is no India growth story but there is a decline that has set us back years, perhaps a decade.

And yet the triumphalism carries on. The amount of resource they have because of the electoral bonds and because of the broad support Modi receives from corporate India cannot be matched by any other party and cannot be matched by all other parties put together.

Another state will fall to the BJP, and if it doesn't this time then certainly it will the next. Elsewhere, society has been torn apart, most likely in a way that cannot ever be repaired. I am not saying this out of despair, but one has to be realistic.

This amount of poison being injected cannot be detoxified without resistance and one sees no resistance to it. On every parameter, from economic decline to national security failure to unemployment to social tensions, India will continue in the path that it has chosen for itself since 2014.

(Source : Rediff.com – 02/02/2021)

GST TECHNICAL GLITCHES BEHIND INPUT TAX CREDIT FRAUDS: CAG



The Comptroller and Auditor General (CAG) of India has found that the Goods and Services Tax (GST) system is prone to input tax credit (ITC) frauds due to complexity in the compliance system.

“The originally envisaged system-validated ITC through ‘invoice matching’ had not been implemented.

“The complexity of return mechanism and technical glitches had resulted in roll-back of key GST returns, rendering the system prone to ITC frauds,” CAG said in its report submitted in Parliament on Wednesday.

The GST returns system is still a work in progress despite more than three years of roll-out, it said. “In the absence of a stable and simplified return mechanism, one of the main objectives of GST rollout — simplified tax compliance system — is yet to be achieved,” the report said.

CAG recommended fixing a definite time frame for rollout simplified returns forms as frequent deferments are resulting in a delay in its stabilisation and continued uncertainty in the GST ecosystem.

During October 2018 to March 2020, CAG examined records relating to 4,736 of 23,106 refunds in 33 Central GST (CGST) commissionerates.

It noticed non-adherence to extant provisions in processing refunds in 280 claims (6 per cent) involving an amount of Rs 16.16 crore.

“We observed instances of irregular grant of refund due to non-consideration of minimum balance in electronic credit



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ledger, irregular sanction of refund of input tax credit availed of on capital goods, etc,” the report said.

GST shortfall

The CGST revenue was short of the Budget Estimates and the Revised Estimates during 2018-19 and 2019-20.

The shortfall vis-à-vis Budget Estimates was 22 per cent and 10 per cent for the years, respectively.

Also, CGST revenue grew 2.97 per cent in FY20 over FY19. CGST revenue as a percentage of GDP, however, declined from 3.08 per cent in FY19 to 2.95 per in FY20.

The share of GST remained constant at 62 per cent of the direct tax collections during the last two years (FY19 and FY20).

To a query over this, the finance ministry said on the recommendations of the GST Council, rate rationalisations have been implemented from time to time by the government and, therefore, the actual indirect tax collections may vary with regard to the target set for a financial year.

It should be noted that in December 2015, the report on the revenue neutral rate and structure of rates for GST recommended the range of 15-15.5 per cent as the revenue neutral rate.

However, the effective weighted average GST rate as of July 2019 was 11.6 per cent.

In addition, the GST Council revised the threshold turnover limits upwards for registration of taxpayers and the composition levy scheme, which affected GST collections, the ministry said.

(Business Standard – 25/03/2021)

LENDING BASED ON GST DATA IMPROVES MSMEs' ACCESS TO CREDIT: VAYANA NETWORK



Vayana has till date enabled \$6 billion in trade finance for 300 supply chains in 25 different industries and processed 1.7 million transactions.

Digital lending based on GST data can help close the credit gap of around \$250 billion for SMEs and provide finance at lower rates to reduce their borrowing costs, according to Vayana Network, a supply chain financing platform.

Vayana has been able to lower the cost of financing for MSMEs on its platform by 200-600 basis points by partnering with banks and NBFCs which are looking at supply chain financing to build their MSME portfolios.

Ram Iyer, founder and CEO, Vayana Network, said MSMEs have been underserved by the formal banking system due to a trust deficit arising from the absence of credible data about them and the prohibitive cost of servicing large numbers of small MSMEs. Vayana addresses the trust deficit by using credible alternative data like GST and real-time trade data analytics to facilitate credit to MSMEs. The smallest of MSMEs are being integrated into large SCF programmes run by the formal banking system, freeing them from the clutches of the high-cost informal market, he said.

Iyer said the financing costs on their network are lower by 200 to 400 basis points for SMEs and up to 600 basis points in case of last-mile retail financing. The company will be targeting \$10 billion in cumulative disbursement in 2022, and he expects the throughput to grow exponentially and double on the platform every year.

Vayana has till date enabled \$6 billion in trade finance for 300 supply chains in 25 different industries and processed 1.7 million transactions.

Vayana and CRIF Solutions, a provider of credit information, analytics, scoring and decision solutions, recently launched a tech-based tool for assessment of MSMEs. The Good Business Score is based on ongoing GST data. Parthasarathi Patnaik, chief risk officer, Vayana Network, said a good score will help MSMEs improve their bargaining power as the score was based on GST filings, which are an authenticated and credible piece of data.

The product has generated interest from MSMEs, corporates, B2B supply chains and lenders, and the company expects to

assess and score over 10,000 SMEs over the next quarter. Two public sector banks, two NBFCs and three corporates have already reached out to the company use the tool to assess their supply chain partners and customers.

(Financial Express – 26/03/2021)

FY22 GROWTH ESTIMATE OF 10.5% NEED NOT BE REVISED: RBI GUV



Showing confidence in India economic recovery, Reserve Bank of India Governor Shaktikanta Das said that the growth projection of 10.5 per cent for the next financial year would not have to be revised given the strong economic recovery of the country.

Speaking at the India Economic Conclave, Das said that now the world knows the dangers of the Covid-19 pandemic and it is not as in the case of 2020 when there was complete uncertainty.

“The revival of economic activity which has happened, should continue unabated going forward. My understanding and our preliminary analysis show that the growth rate in next year, which is at 10.5 per cent which we had given could not require, I repeat, would not require a downward revision,” he said.

On the recent frenzy bond market and the surge in the bond yields globally, the Governor cautioned that disorderly yield curve evolution will act as an impediment for growth and will undermine the process of economic recovery, not just in India but globally.

Regarding the proposed privatisation of state-run banks, Das said that the central bank is discussing the privatisation of public sector banks with the centre, adding that the process will move on.

He said that a healthy banking sector, with a strong capital base and ethics-driven governance remained a policy priority.

(The Statesman – 25/03/2021)

Read and Let Read :-

-: JILTA :-

Owner: Indian Leather Technologists' Association, **Publisher & Printer:** Mr. S. D. Set, **Published From:** 'Sanjoy Bhavan', (3rd floor), 44, Shanti Pally, Kasba, Kolkata - 700107, West Bengal, INDIA and **Printed From:** M/s TAS Associate, 11, Priya Nath Dey Lane, Kolkata- 700036, West Bengal, INDIA

ILTA PUBLICATION

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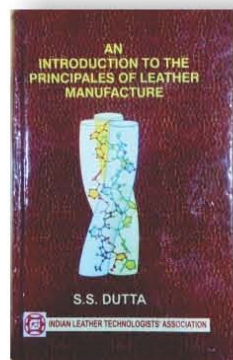
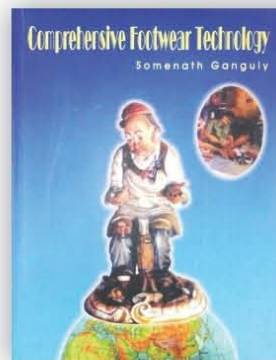
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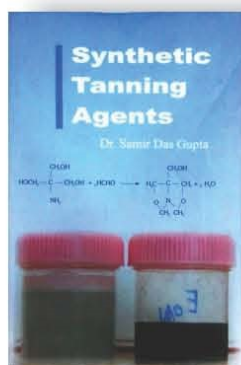
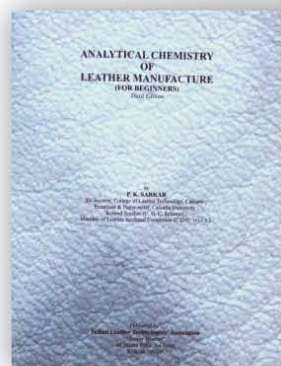
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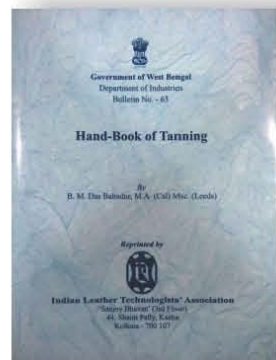
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Title of the Book
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Author
Prof. B. M. Das

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Send your enquiries to :

Indian Leather Technologists' Association

'Sanjoy Bhavan', 3rd Floor, 44, Shanti Pally, Kolkata- 700 107, WB, India

Phone : 91-33-2441-3429 / 3459 Telefax : 91-33-2441-7320

E-mail : admin@iltaonleather.org; mailtoilta@rediffmail.com

Website : www.iltaonleather.org

History and Activities of Indian Leather Technologists' Association

The Indian Leather Technologists' Association (ILTA) was founded by Late Prof. B. M. Das, the originator of Das-Stiasny theory and father of Indian Leather Science on 14th August 1950.

The primary objectives of the oldest Leather Technologists' Association which celebrated its Diamond Jubilee year in the 2010, are:

- ✦ To bring all concerned with the broad spectrum of the leather industry under one umbrella.
- ✦ To organize seminar, symposium, workshop in order to create information, knowledge and latest development for the benefit of all concerned. To offer a common platform for all to interact with each other in order to understand each other's problems and prospects.
- ✦ To publish monthly journal as a supplement to those above objectives. The monthly journal of ILTA is known as journal of Indian Leather Technologists' Association and is the most widely circulated technical journal concerning leather technology.
- ✦ To publish text books for the benefit of students at various levels of study, for the researchers and industry.
- ✦ To have interface between urban and rural sector.
- ✦ To assist Planning Commission, various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies acceptable and adoptable to the industry.
- ✦ To organize practical training and to provide skilled manpower and to motivate good students for study.
- ✦ To conduct activities related to the growth of the export of leather and leather goods from India.
- ✦ As the part of many social activities ILTA has donated Rs. 1 lac to Consul General of Nepal towards relief of earthquake effected of Nepal on 15th Sept, 2015.

INTERNATIONAL & NATIONAL SEMINAR

- ✦ ILTA is the Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS), a 115 years old organization and for the first time the IULTCS Congress was organized in January 1999 outside the developed countries in India jointly by ILTA and CLRI.
- ✦ 2017 IULTCS Congress is scheduled to be held in India again.
- ✦ 8th Asian International Conference on Leather Science & Technology (AICLST) was organized by ILTA in 2010 during its Diamond Jubilee Celebration year.

SEMINAR & SYMPOSIUM

ILTA organizes Seminar & Symposia on regular basis to share information, knowledge & latest development and interactions for the benefit of all concerned. Few are as under:

- ✦ Prof. B. M. Das Memorial Lecture every year during the Foundation Day Celebrations on 14th August every year.
- ✦ Sanjoy Sen Memorial Lecture on 14th January every year, the birthday of our late President for several decades.
- ✦ Prof. Moni Banerjee Memorial Lecture on 15th March every year, the birthday of this iconic personality.
- ✦ Seminar on the occasion of India International Leather Fair (IILF) at Chennai in February every year.

It has also organized:

- ✦ Prof. Y. Nayudumma Memorial Lecture
- ✦ Series of Lectures during "Programme on implementing Emerging & Sustainable Technologies (PriEST)".
- ✦ Seminars in occasion of India International Leather Fair, 2014 and 2015 at Chennai etc. Many reputed scientists, industrialists and educationists have delivered these prestigious lectures. Foreign dignitaries during their visits to India have addressed the members of ILTA at various times.

PUBLICATION

ILTA have published the following books:

- ✦ An Introduction to the Principles of Physical Testing of Leather by Prof. S. S. Dutta
- ✦ Practical Aspects of Manufacture of Upper Leather by J. M. Dey
- ✦ An Introduction to the Principles of Leather Manufacture by Prof. S. S. Dutta
- ✦ Analytical Chemistry of Leather Manufacture by P. K. Sarkar
- ✦ Comprehensive Footwear Technology by Mr. Somnath Ganguly
- ✦ Treatise on Fatliquors and Fatliquoring of Leather by Dr. Samir Dasgupta
- ✦ Synthetic Tanning Agents by Dr. Samir Dasgupta
- ✦ Hand Book of Tanning by Prof. B. M. Das

ILTA has a good Library & Archive enriched with a few important Books, Periodicals, Journals etc.



AWARDS OF EXCELLENCE

- ✦ ILTA awards Prof. B. M. Das Memorial, Sanjoy Sen Memorial, J. M. Dey Memorial and Moni Banerjee Memorial Medals to the top rankers at the University / Technical Institute graduate and post graduate levels to encourage the brilliants to evolve with the Industry.
- ✦ J. Sinha Roy Memorial Award for the author of the best contribution for the entire year published in the monthly journal of the Indian Leather Technologists' Association (JILTA).

LEXPOs

To promote and provide marketing facilities, to keep pace with the latest design and technology, to have better interaction with the domestic buyers, ILTA has been organizing LEXPO fairs at Kolkata from 1977, Siliguri from 1992 and Durgapur from 2010. To help the tiny, cottage and small-scale sectors industries in marketing, LEXPO fairs give the exposure for their products. Apart from Kolkata, Siliguri & Durgapur, ILTA has organized LEXPO at Bhubaneswar, Gangtok, Guwahati, Jamshedpur and Ranchi.

MEMBERS

The Association's present (as on 31.03.2018) strength of members is more than 600 from all over India and abroad. Primarily the members are leather technologists passed out from Govt. College of Engineering & Leather Technology, Anna University, Chennai, Harcourt Butler Technological Institute, Kanpur, B. R. Ambedkar National Institute of Technology, Jalandhar and Scientists from Central Leather Research Institute.

ESTABLISHMENTS

In order to strengthen its activities, ILTA have constructed its own six storied building at 44, Shanti Pally, Kasba, Kolkata – 700 107 and have named it "Sanjoy Bhavan".

This Association is managed by an Executive Committee duly elected by the members of the Association. It is absolutely a voluntary organization working for the betterment of the Leather Industry. None of the Executive Committee members gets any remuneration for the services rendered but they get the satisfaction of being a part of this esteemed organization.



ILTA

Since 1950

Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies]

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