



# NDSA NEWSLETTER

NEPAL DAIRY SCIENCE ASSOCIATION

नेपाल डेरी साईन्स एशोसियशन

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नेपाल डेरी साईन्स एशोसियशनको ९ औं साधारणसभा तथा सम्मान समारोह सम्पन्न

नेपालका डेरी क्षेत्रका विज्ञहरूको पेसागत संगठन नेपाल डेरी साईन्स एशोसियशनको ९ औं साधारणसभा २०७६ साल आश्विन १० गते शुक्रबारका दिन बाग्मती प्रदेशका प्रदेशप्रमुख माननिय अनुराधा कोइरालाज्यूको प्रमुख अतिथ्यतामा याक प्यालेस ललितपुरमा सम्पन्न भयो । उद्घाटन र बन्दसत्र गरी दुई सत्रमा बिभाजित साधारणसभाको पहिलो, उद्घाटन सत्रको अध्यक्षता एशोसियशनका अध्यक्ष श्री टेक बहादुर थापाले गर्नुभएको थियो भने कार्यक्रम संचालन एशोसियशनका महासचिव श्री गिरिधर बर्जाचार्यले गर्नुभएको थियो । उक्त सत्रको सुरुवात राष्ट्रिय गान बाट भएको थियो भने औपचारिक कार्यक्रमको शुभारम्भ प्रमुख अतिथि माननिय अनुराधा कोइरालाज्यूले पानसमा बत्ति बालेर गर्नुभएको थियो । सो सत्रमा बिभिन्न संघ संस्थाबाट आमन्त्रीत व्यक्तित्वहरूले कार्यक्रमको आतिथ्यता ग्रहण गर्नुभएको थियो । सो कार्यक्रममा एशोसियशनका



सदस्यहरूका साथै  
बिभिन्न संघ संस्थाबाट  
आमन्त्रीत प्रतिनिधि  
र पत्रकारहरूको



उपस्थिती रहेको थियो । कार्यक्रममा उपस्थित सदस्य तथा अतिथिहरूको स्वागतमा एशोसियशनको तरफबाट प्रधान सम्पादक श्री सियाराम प्रसाद सिंहले स्वागत मन्त्रव्य राख्नुभयो । कार्यक्रममा उपस्थित अतिथिहरूले नेपाल डेरी साईन्स एशोसियशनको ९ औं साधारणसभाको सफलताको

.....क्रमश पेज नं. २८

## प्रधानमन्त्री के.पी. ओलीद्वारा डेरी लोगो सार्वजनिक

काठमाडौं । कृषि तथा पशुपन्थी विकास मन्त्रालयले दूध दुवानीका लागि प्रयोग हुने लोगो सार्वजनिक गरेको छ । १२ चैत्र २०७७ बिहीबार भएको पशुपन्थीजन्य उत्पादनमा मुलुक आत्मनिर्भर घोषणा कार्यक्रममा प्रधानमन्त्री केपी शर्मा ओलीले लोगो सार्वजनिक गर्नुभएको थियो ।

प्रधानमन्त्री ओलीले डेरी उत्पादन जतिको स्वास्थ्यवर्दक अरु पेय पदार्थ हुन नसक्ने बताउनुभयो । यस्तै प्रधानमन्त्रीले विभिन्न ब्राण्डमा नेपालमा चकलेट उत्पादन गर्न सकिने बताउनु भएको छ । उहाँले चौरीको दुधबाट बनेका खाद्यवस्तुलाई ब्राण्डिङ गरेर अलि बढी मूल्यमै पनि बिक्री गर्न सकिने बताउनुभयो । उहाँले चौरीको दूधबाट बनेका खाद्यवस्तु र च्याङ्गाको मासुलाई जडिबुटी खाएर उत्पादन भएको भनेर बढी मूल्यमा बेच्न सकिने उल्लेख गर्नुभयो ।



घोषणा कार्यक्रममा कृषि तथा पशुपन्थी विकास मन्त्री पद्माकुमारी अर्यालले सरकारले थप कृषि उपजमा पनि आत्मनिर्भरता घोषणा गर्ने बताउनुभयो । आगामी पाँच वर्षमा धेरै कृषि उत्पादनमा आत्मनिर्भर भए मुलुक निर्यातको अवस्थामा पुने उहाँको दाबी छ । कृषि तथा पशुपन्थी मन्त्रालयका पशुपन्थी सचिव डा. प्रेमनारायण कंडेलका अनुसार संयुक्त राष्ट्रसंघको खाद्य तथा कृषि संगठनको मापदण्ड अनुसार आवश्यकता र उत्पादनको अवस्थाका आधारमा यस्तो घोषणा गरिएको हो । उहाँले भन्नुभयो लोगो राखेपछि अब दुध बोकेको गाडी निवार्ध रुपमा एम्बुलेन्स सरह गुदन पाउने छन् । दुधजन्य पदार्थको दुवानी सहज बनाउन छुट्टै लोगो बनाएको दुध विकास बोर्डका कार्यकारी निर्देशक राजेन्द्र यादवले जानकारी दिनु भयो । दुवानीका बेला दूधलाई निश्चित समयभित्र निश्चित तापक्रममा निश्चित ठाउँमा पुराइसक्नुपर्छ तर बन्द हड्डताल वा बाटो अवरोध हुँदा व्यवसायीहरूले समस्या भोग्दै आएका थिए । २०७६ चैत ११ गतेको मन्त्रीपरिषद् बैठकले दूधलाई अत्यावश्यकीय वस्तुको रूपमा राखेको थियो । कार्यक्रमको अन्त्यमा कृषि तथा पशुपन्थी विकास मन्त्रालयका सचिव श्री योगेन्द्र कार्काले मन्त्रालयको तरफबाट धन्यवाद ज्ञापन गर्नुभयो ।



Final Review : Tek Bahadur Thapa

Chief Editor  
Siyaram Prasad Singh  
Members

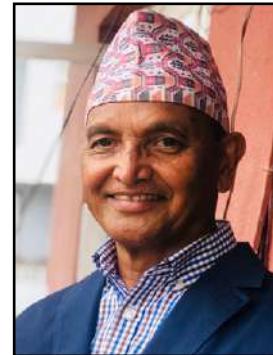
Damodar Dhakal  
Shankar Adhikari

Design Support : Niranjan Timalsina

(Source: NDDB तथा लुम्बिनी सञ्चार)

## Where the Dairy Sector Heading?

Dairy sector is considered to be a very important sector of national economy, and said to be contributing to 9 % in national GDP, if it is true. Dairy value chain actors/stakeholders are moving in their own direction without much collaborations and coordination. Milk Quality at collection and consumer level: the core value of dairy business seems to be forgotten and ignored. Without consideration on quality at production and finished product level, the dairy business and industry cannot flourish; and consumers cannot be forced to consume. It has been discussed for long and series of recommendations made to upgrade and amend the Mandatory milk Quality Standards of Government; and none of responsible agencies seem to be taking actions. Till the government authorities and dairy industries are in love for the 3 % fat and 8 % SNF milk standard and the dairy industry and business in this country will not flourish. Due to this water adulteration at collection level is made legal; and many dairies transporting chilled milk from far east and western part of Nepal are carrying more than 10 to 15 % water; which they could add in Kathmandu, if they wish so. It is adding price burden to the consumers.



National Dairy Development Board Nepal has been functional for last more than 25 years. Its delivery is not yet visible. Structure of board is huge, and mostly members representing do not really know their functions. In addition, Pradesh Governments are in a race to form Pradesh Dairy Boards with huge number of board members. Please note, India is a largest milk producer in the world with population of plus 135 crores; and they have a single Dairy Board called NDDB, India with a board of director size of only five members. Can Nepal Government and NDDB Nepal take some lessons from this development?

Very interesting to be noted is that these huge boards do not appoint dairy experts as board members. Only people having connections through ruling party line get appointment as dairy expert having very little understanding of dairy sector.

NDSA thanks NDDB for bringing out Five Year Dairy Development Plan (2077/078 – 2081/82). If only part of its plan is implemented, dairy development can prosper.

Trained human resource is the basic requirement for any sectoral development; and same applies to dairy sector. Dairy productions related manpower is enough in the country however manpower needed for processing industry are lacking; such as dairy technologists, dairy engineers, dairy quality management experts, dairy economists and so on. Currently, more than 50 dairy technology and dairy safety management graduates and post-graduates who completed from India and Nepal are seeking the jobs, despite government and private sector are in acute shortage of such dairy experts, in their workplaces.

Foreign Direct Investment (FDI) in the dairy sector is causing chaos and resistance. If the local dairy industries can modernize their facilities to produce demand led value added dairy products, it can retard FDI entry. However, if imported value added dairy products are flooding the supermarkets, there is already indirect FDI. In such a situation, better to have FDI which will export 75 % of its products, locally produced milk will be used, as well employment will be generated. This will help in gradually minimizing the long-standing milk holidays problem. On the brighter side, FDI will inject much needed technology and investment; as well it will be implemented in collaboration with local dairy companies. Politically motivated cartelling will not pay off much in the long-term.

NDSA intends to initiate dialogue with relevant stakeholders, professional bodies, Agricultural universities and research institutes to form a national committee of International Dairy Federation (IDF); which in turn can initiate the process to take membership with IDF.



Tek Bahadur Thapa  
Chairman

### Facts & Figure

Nepal Produced 2.17 mill MT during 2018/19 with per capita availability of 73.28 liters per annum (201 gm/day), with the population estimate of 29,609,623 (CBS 2019). Indian produced 187.7 million MT (394 gm/day) during the year (2018/19), according to NDDB India.

During 2018, world milk production was 843.04 mill MT. India was the highest producer (187.7 mill MT); followed by USA (98.72 mill MT) and Pakistan (45.79 mill MT) respectively. (Source: FAOSTAT, 06 NOV 2020.)

### Dairy Training Programme Completed in Dolakha

Nepal Dairy Science Association organized a five-day dairy training programme entitled Hygienic Milk Production and Milk Quality improvement in Charikot, Dolakha from Falgun 9-13. The training was based on class room lectures, practical and visit to the dairy plant. Observation and Practical training were conducted in Dolakha Dairy Ltd. Thirty-eight participants attended the training representing member of dairy cooperative societies, private dairy entrepreneurs including from Dolakha dairy. Mr. Chakravarty Poudel coordinated the training programme, being actively supported by NDDB Technical officers Rajesh DC and Ajay Pokharel; and Dr. Hari Kumar Raghu Shrestha, officer from Livestock service Centre Dolakha.

Participants were provided the completion certificates at the end of training. NDDB Executive Director Dr. Rajendra Prasad Yadav was the guest of honour in a closing ceremony being presided over by the Chairman of Nepal Dairy Science Association Tek B Thapa. ED Dr Yadav highlighted the importance of training, and other programmes implemented by NDDB; as well lauded the NDSA for their technical advisory support to NDDB, as and when needed. Training participants namely Hem Kumar Basnet from Boch and Mrs. Tulasha Khadka from Bhirkot provided feedbacks on the training, and emphasized the need of more of this kind of training for the farmers and entrepreneurs.

Guests were honoured with a token of love (MAYAKO CHINO) to ED Dr. Rajendra Prasad Yadav and Director Bidur Rai from NDDB, Dr. Hari Kumar Raghu Shrestha from DLS Dolakha and Vice-chairman Madan Kumar Thapa from the District Cooperative Union, Sindhuli, including the training coordinator Chakravarty Poudel and trainers Rajesh DC and Ajay Pokharel by NDSA Chairman Mr. Thapa.



NDSA Chairman Thapa concluded the closing ceremony with vote of thanks to ED NDDB, trainees, trainers, line agencies, Dolakha Dairy Udyog Ltd, and the training team who worked dedicatedly for successful completion. NDDB, relevant agencies like Livestock department and projects should run more need-based trainings; and fully functional dairy training Centre is needed which has been identified by NDDB, Mr. Thapa further added. The training was conducted in collaboration with National Dairy Development Board. ♦ ♦ ♦

(Source: Rajesh D.C. and Chakrabarty Poudel)

आशिष  
इन्टरप्राइजेज

एनलाइन रोट

जेलर

विलिङ्ग रोट

कॉन्ट्रोलर

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महारिं रोड, पिराटनगर-६, नो. ८८५१०२०४८०, ८८५१०३२२२०, ०२९-५९७८९३

गायत्री दुध

खरिपाटी डेरी प्रा. लि.

दुध • दही • घिउ • पनिर • आइसक्रिम

चाँगुलारायण न.पा.-५, खरिपाटी, भक्तपुर, फोन नं. : ०१-५०९११८७  
G.P.O. Box No.: 13326 Kathmandu, Nepal, Email: kdpl@ntc.netp.np  
Website: www.kharipatidairy.com.np

### DDC, s Interaction Program with NDSA on “DDC’s Current Competitive Position, Market related Issues and Way Forward for the Sustainable Improvement”; 24 Mangsir, 2077 (December 9, 2020)

Dairy Development Corporation (DDC) organised an interaction programme with Nepal Dairy Science Association (NDSA) experts and former general managers to review the current status and issues verses the way forward to improve the overall performance of DDC. Interaction programme was attended by the senior officers from DDC including GM Rudra Prasad Poudel and officials from Ministry of Agriculture and Livestock Development. The programme was chaired by the Joint Secretary MoALD Dr. Bimal Kumar Nirmal; as well attended by the Executive Director of NDBD Dr Rajendra Prasad Yadav. NDSA was represented by its chairman Tek B Thapa, Chief-editor/EC member Siyaram Prasad Singh and NDSA advisor Rajendra Gopal Shrestha.

GM Rudra Prasad Poudel welcomed the participants and highlighted the meeting objectives.

During the session, DDC marketing head Sanjeeva Jha provided the overview of DCC operations and issues, brought out the questions on the table.

Before starting the deliberations, NDSA Chairman Thapa offered respect and condolences in loving memory of NDSA members and former DDC staff members who passed away namely Ram Awtar Mandal, Mahendra Yadav, Ringi Sherpa, Bhairab Prasad Manandhar and Arun Shrestha. Mr Thapa suggested some immediate measures which DDC immediately could implement and improve the quality of milk being collected and marketed. He emphasised that quality is the key for improving the business performance of DDC through winning the confidence of honourable consumers. It was also emphasised that DDC should induct new dairy technologists to fill the human resource gap in its value chain; and there are so many dairy technologists who are looking for jobs. As well, there is a trend of proposing to start milk powder plants here and there without proper assessment of techno-economic feasibility, whereas already operational plants are facing number of difficulties to smoothly run.



SP Singh emphasized the need of restructuring of DDC for its autonomy of business management, as cost cutting measures are needed.

Rajendra Gopal Shrestha emphasized on the HRD need, and refresher trainings are needed at all level from floor to supervisory, and to senior level managers. Periodic workshops also help to energize the staffs and management. Overall emphasis of NDSA: with political milk price and with political quality, dairy industries cannot go ahead. Should go for market driven products, quality and competitive pricing.

Executive Director of NDBD Dr Rajendra Prasad Yadav highlighted the NDBD, s activities including initiation for the development of dairy logo for dairy transport vehicles, trucks, milk tankers, refrigerated delivery vans. Officers from MoALD also commented and provided their inputs on improving the overall dairy scenario and the DDC.

DDC Finance Chief Rudra Karki raised the problems faced by the DDC, and made request for needed government support to solve the problems.

From the chair, Dr. Bimal Kumar Nirmal commented on the suggestions provided by the NDSA experts; advised the DDC management to develop a business plan on how to move ahead and submit within a week for further discussion. ♦ ♦ ♦

*(Source: Tek B. Thapa, Siyaram Prasad Singh, and Rajendra Gopal Shrestha)*

#### Simple Facts about the dairy sector

The dairy sector is a large, transformative global force that has a far-reaching impact on economies, societies and individuals.

- ONE BILLION PEOPLE have livelihoods supported by the dairy sector.
- 600 MILLION PEOPLE live on 133 million dairy farms around the world.
- NEARLY 10 PERCENT of the world population directly depends on dairy farming.
- 816 MILLION TONS of milk are produced by the dairy sector annually.
- AMONG THE TOP 5 Milk ranking as an agricultural commodity in both quantity and value terms.
- 44.4 LITERS OF LIQUID dairy products are consumed per capita worldwide

*(Source: Compiled from Global Dairy Platform).*

**Some outcomes of webinar on Role of Professional Dairy Technologists/Technicians  
in Improving Quality & Safety of Dairy Products**

Nepal Dairy Science Association (NDSA) organized the webinar (August 15) with the wider participation from the overall dairy sector such as NDDB, DDC, DIA, NDA, CDCAN, NPC, Prades -2 agriculture secretary, DT graduates and post-graduates available in the job market, senior dairy experts and NDSA members. Around 65 people participated the webinar. Presentations were made by Dr. Rajendra Yadav, ED, NDDB, DDC DGM Rajendra Adhikari, DIA president Raj Kumar Dahal, CDCAN President Narayan Prasad Devkota, NDA vice-president Gyanendra Bajgain, Dr. Keshav Singh, Sujal Dairy. Young Dairy technologists and dairy engineers shared their experiences during the meeting, and asked for opportunities to work with the dairy industries. They also raised the issues like Job entry exam courses in DDC, DLS are not relevant to the dairy technologists, and they are more relevant to vet. Doctor, food technologists and others. In DLS, there are positions for Dairy officers but entry exam courses are 90 % on animal husbandry, thus the courses needed revision making specific to dairy officer. As well, DFTQC has not hired Dairy technologists and they take only food technologists whereas they do lots of inspection work in milk and dairy products.

From 2015 to 2019, thirty-three Nepalese students have completed B.Tech. (DT) from Sam Higginbottom University of Agriculture, Technology and Sciences (SHUATS), Allahabad, India; and within 2020-2021, twenty more students are graduating. They have been working in various dairies in India and abroad, however they are keen to work within the dairy sector of Nepal. As well, seven B.Tech. (DT) graduates are passing out from CAFODAT, Purbanchal university. On the other hand, Nepalese dairy sector is facing acute shortage of trained dairy technologists which was reported in the One-day workshop on Availability and Requirement of Dairy Science and Technology Related Human Resources in Nepal (2019), being jointly organized by CAFODAT, DFTQC, NDDB, DDC, NDA, DIA, NDSA & NEFOSTA in 11 June 2019.

Quote: Twenty-year projection shows formal sector milk processing will increase from 17 % to 37 % in the 20th year (2039) from the base year 2019. In the base year, 261 dairy technologists/technical officers are required which will increase to 1256 at the end of 20-year dairy human resource plan period. Similarly, the need of diploma or supervisory level dairy technologists and technicians increases from 522 to 2512, in order to diversify and develop a competitive dairy processing in Nepal. This projection is based on the average (2011/12 – 2017/18) annual growth rate of 4.4 % in milk production (Thapa, T.B., Bhattarai, U.K. & Dahal, B.K. 2019). Unquote

NDDB Executive Director Dr. Rajendra yadav highlighted the potential opportunities for Dairy technologist (DTs) in Nepal. In addition to the dairy industries Dairy technologist can avail opportunities to work in NDDB, DLS, DFTQC, CTEVT, donors' projects universities and so on. He further added various universities will soon hire dairy technologist as their faculty member. NDDB in consultation with Ministry of Agriculture and Livestock Development is in process of establishing National Dairy Research and Training Institute (NDRT). This will open job opportunities for dairy technologists.

CDCAN President Narayan Prasad Devkota requested the dairy value chain stakeholders to be together for the dairy sector development. He added that CDCAN can provide a lot of opportunity for DT's & is interested to work with technologist for improving the milk quality.

DIA President Raj Kumar Dahal informed that all the member dairies of DIA are currently employing technologist in their industries. He mentioned that currently only 17% of total milk produced is collected & marketed by formal sector and requested the stakeholders to focus on how we can increase the milk handling from informal to the formal sector which will create even more opportunities for DT's and assured quality products for the consumers. DDC DGM Rajendra Prasad Adhikari & NDA Vice-President Gyanendra Bajagain also talked about need, opportunities and importance of DTs in the dairy industry.

Dr. Keshav Singh Jamwal, a Senior dairy technologist with more than 25 years of experience in dairy & food industries in Nepal and India; and currently working in Sujal Dairy delivered a presentation on the Role of dairy technologist on safe food production and motivated young technologist and also released immediate hiring opportunity package for 14 DTs in Sujal dairy chain.

From the panel, Prades 2 Agriculture secretary and former DG DLS, Dr. Bimal Kumar Nirmal expressed

happiness of hearing from so many DT graduates who are interested to join the industries in the job market. Government will use this kind of specific manpower for the sector development. He said there are lots of opportunities coming up for DTs since new dairy plants are coming up, as well Prades Dairy board need sizable manpower, since dairy is one of the priority activities. He further mentioned, Prades is expanding dairy activities in the corridor of Hulaki Rajmarg. He appreciated NDSA for connecting the DT graduates with the dairy industries and overall sectoral stakeholders. Senior dairy specialists and advisor of NDSA **Rajendra G Shrestha** also commented from the panel; and said, our programmes and activities should be based on the ground reality rather than imitation from others.



Arun Shrestha, former Executive Director NDDB said “I’m really happy to share that my little effort, while in NDDB 2004-08, could restore the Scholarships from Friendly Country, India for Dairy Technology Graduate Programs. Since then, Nepalese were selected for DT studies in India, but he is not sure how many studied and how many returned to Nepal after studies.

Senior dairy expert and chief-editor of NDSA SP Singh, NDSA vice-chairman RT Chaudhary, NDSA treasurer Niranjan Timilsena made valuable comments and contribution to the forum.

NDSA General-Secretary Giridhar Bajracharya presented vote of thanks to the entire participants and welcomed the DT graduates. Webinar moderator and NDSA Chairman, Tek B. Thapa thanked everyone and closed the programme. ♦ ♦ ♦

(Source: Siyaram Prasad Singh, Giridhar Bajracharya and Niranjan Timalsina)



# सुखाली<sup>®</sup> दूध

## थोपा थोपामा पौष्टिकताको विश्वास

सफल दूधको हरेक थोपामा छ, क्यालिसयम, बिटामिन्स, प्रोटीन, बिनरल्स, अणि क्यालोरिज जस्ता थुपे पौष्टिक तत्वहरू, जुब छ, अपरिहार्य मेयो परिवारको दृवरूप जीवनको लागि ।

<b>Calcium</b> बलियो पुष्ट बर्चरको लागि	<b>Vitamins</b> रोज साङ लाईने छानताको लागि
<b>Protein</b> नाशोरी बलाउनको लागि	<b>Minerals</b> शारीरिक तथा नाजाहारी विकासको लागि
<b>Calories</b> तामत र सफुटिको लागि	





**सुजल डेरी प्रा. लि. पोखरा**

### Professional collaborations and contributions

- NDSA's Chairman Tek B. Thapa visited Pokhara from Nov 22-24, 2019 where-in NDSA Advisor Ishwari Raj Neupane, Treasurer Niranjan Timilsina, and Gandaki province Coordinator Dhurba Kalpit Subedi joined the mission. The team had a courtesy consultative meeting with number of dairy industry stakeholders; and as well Pradesh Agriculture Ministry. Team visited Sujal dairy and had meeting with the GM of Niraj Shrestha and Production Manager Keshav Singh; as well Gyanendra Bajgain, Bajgain Dairy and Suresh Shrestha, Shri Krishna Dairy.
- Nepal Dairy Science Association (NDSA) congratulated Dr. Rajendra Prasad Yadav for his appointment as the Executive Director of NDDB on March 19, 2020 being attended by NDSA members Tek B Thapa, RT Chaudhary, Girdhar Bajracharya, Niranjan Timilsina, Siyaram Prasad Singh, Dr. Hasana M. Shrestha, Rajesh DC and Shankar Adhikari.
- NDSA Vice chairman Mr. Ram Tapeswor Chaudhary attended a Discussion meeting on "**Dairy directory**" organized by NDDB with dairy sector stakeholders on 20 December 2020. "**Dairy Diary 2077**" is already published by NDDB, where lots of information related to dairy sector is included.
- NDSA Secretary Giridhar Bajracharya attended a consultative meeting on "**Defining and categorization of Formal and Informal Dairy sector**" organized by NDDB and provided NDSA's Input to the NDDB on 5 January 2021.
- NDSA Treasurer Niranjan Timilsina represented NDSA on one-day workshop program organized by NDDB on a topic "**Role and Coordination of NDDB and/with PDDB with dairy stakeholders to uplift the Nepalese Dairy sector**" at Hotel Yellow Pagoda, Pokhara on February 4, 2021. He raised number of issues and provided the suggestions on formation of technical committees, and due representation of NDSA as competent neutral experts forum. NDSA advisor Ishwori Raj Neupane also attended the meeting as special invitees.
- NDSA Vice chairman Mr. Ram Tapeswor Chaudhary attended the one-day workshop program on "**Milk and milk product's quality and marketing opportunities and challenges**" organized by DDC - Janakpur Milk Supply Schemes and provided NDSA's inputs on the occasion on February 22, 2021 in Janakpur.
- Tek B. Thapa participated and presented a discussion paper on "**Dairying during COVID-19 and Beyond**" during Web Conference organised by Futurex Group (New Delhi) on Dairy Technology and Dairy Farming where in South Asian speakers from India, Sri-Lanka also made presentations (August 2, 2020).

### Members activities:

#### Rajendra Gopal Shrestha

- Nepal Dairy Science Association participated in the World Milk Day celebration jointly organized by National Dairy Development Board and other dairy industry stakeholders in a ceremony at DLS, NDDB premises this morning. NDSA advisor RG Shrestha represented in NDSA in the celebration, as well delivered greetings and opinions about the current aspect of dairying in Nepal. June 1, 2020 (WMD)

#### Siyaram Prasad Singh

- Worked as dairy expert in the study team of Citizen Development Solutions for the preparation of Five-Year Dairy Development Plan 2077/82 for NDDB.
- Worked as a team leader to develop a Bagamati Province Dairy Development Plan 2078.
- Worked as team leader to develop a feasibility report and business plan for a small scale dairy unit in Dang/ Ghorahi for Mahila Samudaik Sewa Kendra, Dang in collaboration with Mahila Laghu Bittiya Sanstha.

#### Giridhar Bajracharya and Niranjan Timilsina

- NDSA GS Giridhar Bajracharya and NDSA Treasurer Mr. Niranjan Timilsina attended the talk program on "**Trends and opportunities for food innovation**" by Prof. Bhesh Bhandari organized by NABIC on 13 February 2020.

#### Giridhar Bajracharya:

- As a domain expert in Nepal Agribusiness Innovation Centre (NABIC) in connection with "Provision of Business Development services for Innovation and Entrepreneurship Development" for the Nepal Livestock Sector Innovation Project (NLSIP): & Adjunct Professor in CAFODAT, lecturing courses in dairy technology.

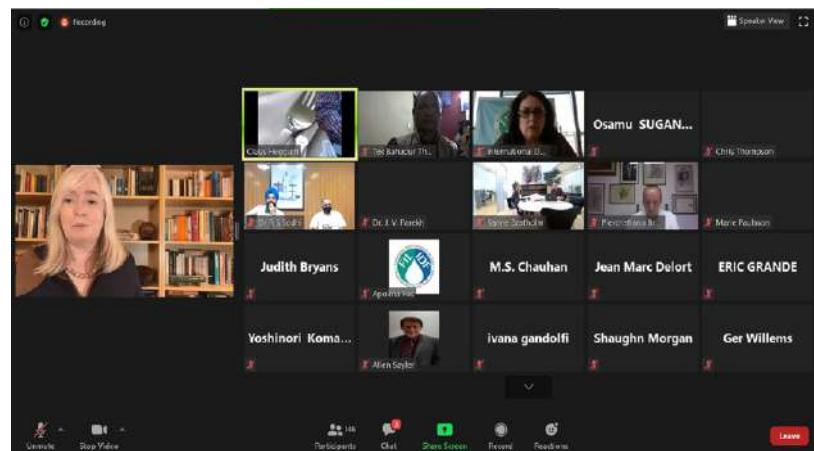
#### Nirajan Koirala

- Nirajan Koirala participated and contributed in a workshop on establishing collaboration between central

NDDB and Prades Dairy Board in Chitwan on 27 Chaitra 2077 B.S. Also, NDSA editorial committee member Damodar Dhakal also attended the workshop.

### Tek B Thapa

- Privileged to participate in IDF Forum 2020, hosted by International Dairy Federation (based in Brussels) on 3 November 2020. Around 162 Experts and stakeholders from IDF community and dairy professionals across the dairy sector worldwide attended the Forum. IDF Director General Caroline Emond moderated the meeting. Following were the major agenda including Q&A; A reflection by IDF President Dr Judith Bryans on her 4-year mandate and lifetime contribution to IDF; Former Chair of the IDF's Science Programme Coordination Committee (SPCC) Piercristiano Brazzale's report on the work of the SPCC and his vision for IDF going forward; and IDF DG Caroline Emond introducing IDF Annual Report 2019-2020 and specific examples of IDF achievements in the past year.
- As a team leader, led the study team of Citizen Development Solutions for the study and development of Five-Year Dairy Development Plan 2077/82 for NDDB.
- Undertaken home based mission for Country Support Group, FAO Regional Office for Asia and Pacific, Bangkok as International Food Systems and Partnerships Consultant from 18 November to 31 December 2020.



### Dr. Binod Prasad Gupta

- Represented NDSA in a meeting at MoALD, discussing the celebration of upcoming World Veterinary Day on 24 April 2021. This year theme is Veterinarians Response to the COVID-19 Crisis.

### Promising Young generation dairy scientists and Technologists

**Avinash Singh** completed B. Tech. Dairy Technology in 2016 and underwent training in Amul India as an intern. Then he joined Gyan dairy Lucknow as a Technical officer. He also completed master degree in food processing engineering 2019. Thereafter, he worked in Goma engineering as a marketing executive.

**Yukesh Niraula** completed B. Tech. Dairy Technology in 2017. He got college placement in Almaria Dairy Dubai and worked for two-years. Currently he is working in Laliguras dairy Nepal.

**Manoj Adhikari** completed B. Tech. Dairy Technology in 2017. Then he joined post Graduate in International relations at South Asian University, New Delhi. Currently, he is working as Planning and Administration officer Mandandeupura municipality Kavrepalanchok, Bagmati, Nepal.

**Bipin Nayak** completed B. Tech. Dairy Technology in 2018, then involved in Hatsun Dairy Pvt Ltd Chennai as a intern and Technical officer. He worked in Bapudham milk producer company Motihari Bihar India as a In-charge of BMC. He completed master degree in M Tech food Safety Quality Management System from SRM University through Indian Embassy Fellowship. Currently he is involved in Bhawani Dairy Bharatpur Chitwan.

**Niraj Singh** completed B. Tech. Dairy Technology in 2018 and involved in Amul dairy as an intern; then he worked in Bapudham milk producer company as a quality executive. He completed his Master's degree from SRM university in M Tech food Safety Quality Management System through Indian Embassy Fellowship.

**Aashish Kumar Sah** completed B. Tech. Dairy Technology in 2019 and involved in Laxmi ice cream pvt ltd in Ghaziabad (third party of mother dairy). Then he continued master degree in Food Processing Technology in GITAM University. Currently, he is doing internship in Amrapali Beverage Pvt. Ltd. Mahottari Nepal.

**Nishi Shah** - Completed B.Tech (Dairy Technology) from Sam Higginbottom University of Agriculture, Technology and Sciences, Allahbad, India in 2020. Currently, she is working as Laboratory Incharge in Delish Dairy, Chitwan since 2nd Magh 2077.

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## World Milk Day During COVID year 2020

Nepal Dairy Science Association participated in the World Milk Day celebration jointly organized by National Dairy Development Board and other dairy industry stakeholders in a ceremony at DLS NDBB premises this morning. NDSA advisor RG Shrestha represented in NDSA in the celebration, as well delivered greetings and opinions about the current aspect of dairying in Nepal.

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### World Milk Day Celebration 2019

World Milk Day (2019) was celebrated with lots of enthusiasm and fanfare with the active participation of dairy stakeholders. Nepal Dairy Science Association also actively participated. During the WMD (2019) official programme, NDSA Chairman Tek Bahadur Thapa spoke about the importance of WMD; as well highlighted the issues and constraints faced by the dairy sector. Former NDSA chairman Arun Shrestha was honoured for his life time achievements by the Minister of Agriculture Hon. Chakra Pani Khanal. Few photo Highlights of WMD are;



### नेपाल डेरी साईन्स एशोसियशनले दायर गरेको रिटको शुक्रबार सर्वोच्चमा सुनुवाई हुने

२०७७, १४ आश्विन बुधबार १४:०४ काठमाडौं।

नेपाल डेरी साईन्स एशोसियशनले शैक्षिक योग्यता नतोकिएको र पद अनुरूप अनुभवको योग्यता नभएको भन्दै बाप्ती प्रदेश दुध विकास बोर्डको उपाध्यक्ष पदको विज्ञापन विरुद्ध सर्वोच्च अदालतमा दायर गरेको रिटको सुनुवाई असोज १६ गतेका लागि तोकिएको छ।

एशोसियशनका तरफबाट महासचिव गिरीधर बज्राचार्यले दायर गरेको रिटको असोज १६ गते सुनुवाई हुने भएको हो। एशोसियशनले विशिष्ट श्रेणीको उक्त पदका लागि नेतृत्व दिनसक्ते आवश्यक शैक्षिक योग्यता र अनुभवलाई सम्बोधन हुने गरी ऐनमा संशोधन गर्न तथा प्रतिस्पर्धात्मक नियुक्ति प्रथा अबलम्बन गर्न पनि आग्रह गरेको छ।

(source: हातमा खबर प्रकाशित मिति २०७७, १४ आश्विन बुधबार १४:०४)

## मोजारेल्ला चीजका गुण



डा. राम राज पन्थी, आयरल्याण्ड\*

मोजारेल्ला चीज धेरै उत्पादन हुने चीज मध्येको एक प्रकारको चीज हो । इटालीको कम्प्यानिया भन्ने ठाउँमा प्राचिनकाल देखि भैसीको दूधबाट, पुरानै प्रविधि अपनाई यस चीजको उत्पादन गरिन्छ । हाल मोजारेल्ला चीज गाईको दूधबाट उत्पादन गर्ने चलन छ । पिज्जामा, तथा अन्य खाध्य पदार्थमा उपयोग हुने भएकाले, यस चीजको माग विश्व बजारमा बढ्दो छ । सामान्यतया मोजारेल्ला चीज, नरम प्रकृतिको, सेतो, रेशादार, कोरेसोमा सजिलरी कोर्न मिल्ने (Shreddable) र तताउँदा पग्लिने अनि तन्किने (Stretchable) हुनु पर्ने हुन्छ । गुणस्तरका हिसाबले मोजारेल्ला चीजलाई उक्त चीजमा हुने प्याट र पानीको मात्राको अधारमा बर्गिकण गर्ने गरिएको छ । सामान्यतया मोजारेल्ला चीजमा ५२ देखि ६० % पानी र पूर्ण ठोस पदार्थमा ४५ % भन्दा बढी प्याट हुनु पर्दछ । अर्थात, १०० ग्राम चीजमा यदि ५२ ग्राम पानी छ भने त्यसमा ४८ ग्राम पूर्ण ठोस हुन्छ जस मध्ये कम्पितमा २२ ग्राम प्याट हुनु पर्दछ । विभिन्न देशमा व्यापारिक हिसाबले कम पानी र प्याट भएको (low moisture part-skim) मोजारेल्ला (पिज्जा) चीजको उत्पादन गरिन्छ जसमा नियमन गर्ने निकायले ४५ देखि ५२ % पानी र पूर्ण ठोसमा प्याट ३० देखि ४५% हुनु पर्दछ भनेर तोकिएको पाइन्छ । त्यसैले उपुक्त गुणस्तरको लागि प्याट र पानीको मात्र मिल्ने गरि चीज उत्पादन गर्नु आवश्यक हुन्छ । यसका अलावा मोजारेल्ला चीजको सहि उपयोगका (functionality) लागि तातोमा पग्लिने अनि तन्किने (melting and stretching functionality) गुणलाई अतिनै महत्वको रूपमा उपभोगताले हेर्ने गर्दछन् । गुणस्तरीय मोजारेल्ला चीज पिज्जामा हालेर २१८ डिग्री सेन्टिग्रेडमा १२ मिनेट सम्म पकाएर तन्काउँदा सम्पूर्ण चीज पग्लिएको हुनु पर्दछ र चीजलाई तन्काउँदा लगभाग ७ सेमि टुक्रा नपरी तन्किन पर्ने गुण बिकसित देशहरूमा तोकिएको छ । नेपालमा मोजारेल्ला चीज, करिब २ दशक देखि डेरी उधोगहरूमा उत्पादन तथा बिक्रीवितरण हुने गरेको छ र गुणस्तरीय चीजको माग बढ्दो छ । मोजारेल्ला चीजको पग्लिने अनि तन्किने गुण कुन कारणले बिकास हुन्छ र कसरी गुणस्तर कायम गर्न सकिन्छ भन्ने विकासमा छलफल गरिएको छ ।

ताजा गाईको दूधमा लगभग ८७% पानी हुन्छ र बाँकि १३% भागमा अन्य ठोस जस्तै प्रोटिन, प्याट, ल्याक्टोज, तथा विभिन्न खनिज रहेको हुन्छ । ताजा दूधको अम्लियपना pH ६.७ को आसपासमा रहन्छ । कुनै पनि चीज उत्पादन गर्ने बिधि भनेको दूधमा रहेको पानीको केहि मात्रा निस्काशन गरि ठोसको भाग विशेष गरि प्याट र प्रोटिनलाई एकत्रित गर्ने हो । विशेष गरि दूधलाई उपयुक्त तापक्रममा जोर्डन (कल्चर) र रेनेट प्रयोग गरि जेलमा परिणत गरिन्छ र आवश्यक मात्रामा पानी निस्काशन गर्नको लागि उक्त जेललाई सानो सानो टुक्रामा काटि, चीज भ्याटमा विभिन्न बिधि (Stirring, Cooking, Draining, Chedaring) अपनाई, अन्तमा चीज कर्डलाई कुनै आकारको भाँडो (Mould) मा राखेर अट्याउने (Pressing) गरिन्छ । चीजको प्रकार तथा गुण अनुसार यी विधिहरूमा फेरबदल हुन सक्छ । मोजारेल्ला चीज उत्पादनमा तयार भएको चीज कर्डलाई तातो पानीमा राखेर तन्काउने (Stretching) गरिन्छ । उपयुक्त तन्किने गुणमा विकास हुनको लागि उत्पादन बिधि तथा त्यसमा हुने रासायनिक परिवर्तनले महत्वपूर्ण खेल खेलेको हुन्छ जसको सहि तबरले नियन्त्रण गर्नु आवश्यक हुन्छ ।

चीज उत्पादन बिधिलाई रासायनिक रूपमा हेर्ने हो भने दूधमा रहेको मुख्य प्रोटिन (जसलाई केजिन भनिन्छ) मा आएको परिवर्तनले नै भूमिका खेलेको हुन्छ । ताजा दूधमा केजिनहरू एकापसमा गुजुल्टिएर (Casein Micelle) साना साना कणको रूपमा घुलेका हुन्छन् । केजिनका कणलाई गुजुल्टोमा बाध्ने काम क्यालिसयम, फोस्फेट, तथा अन्य रासायनिक अन्तर्क्रियाहरूले गरेको हुन्छ । त्यसैले दूधमा हुने जम्मा क्यालिसयम मध्ये लगभग ६५% क्यालिसयम केजिनमा उपलब्ध हुन्छ भने बाँकि ३५ % पानीमा घुलेको अबस्थामा रह्न्छन् ।

चीज उत्पादन गर्दा दूधमा सुरुमै रेनेट मिसाइएको हुन्छ, जसले एउटा केजिनको गुजुल्टोलाई अर्कोसंग जोडेर केजिनको जालो (Protein Network) बनाएको हुन्छ, र लगभग ३० मिनेट भित्रै उक्त दूध दहि (वा जेल) जस्तो आकारमा बदलिन्छ । उक्त जेललाई सुक्ष्मरूपमा हेर्दा, केजिनको जालोमा पानी तथा प्याटका मसिना थोप्लाहरू अदिकाएर बसेको हुन्छ । त्यस्तो जेल बनिसकेपछि, सानो टुक्रा पारेर काट्दा जेलबाट पानी तथा पानीमा घुलन्सिल पदार्थको निस्काशन सम्भव हुन्छ । प्रयोग गरिएको दहिको कल्चरले केहि समयमानै दूधमा उपलब्ध ल्यक्टोजलाई पचाई अमिलोपानाको विकास गर्दछन् । अमिलोपना राखेर अबलम्बन गरिएको हुन्छ, जस्तै दूधको तापक्रम, जोर्डनको मात्रा, चीज बनाउने बेलाको तापक्रमहरू आदि । यसो गर्नु किन महत्वपूर्ण छ भने, चीज उत्पादन गर्दा अमिलोपना विकास हुने प्रक्रियाले केजिनमा परिवर्तन ल्याउँदछ साथै यसले चीजको स्वादमा असर गर्दछ । मोजारेल्ला चीज उत्पादन गर्दा pH ६ को आसपासमा कर्डलाई एकत्रित गरिन्छ र जम्मा भएको पानीलाई निस्कार्सित (drainage) गरिन्छ र कर्डमा pH ६.२ पुगीन्जेल सम्म cheddaring प्रविधि अप्नाइन्छ । त्यसपछि तयार भएको चीज कर्डलाई सानो सानो टुक्रा पारि ६० देखि ६५ डिग्रीको तापक्रम हुने गरि ८० डिग्रीको पानीमा मिसाइन्छ र stretching गरिन्छ । कर्डको pH ५.२ हुँदा आवश्यक मात्रामा केजिनबाट क्यालिसयम, फोस्फेट घुलेको हुन्छ र केजिन लचकदार हुन जान्छन । यदि कर्डमा अम्लियपना धेरै भएमा तातो पानीमा राखेर तन्काउँदा चुडिने र अम्लियपना कम भएमा, चीज कम तन्किने हुन्छ, जुन केजिनहरू कुन मात्रा क्यालिसयम संग जोडिएका छन भनेमा भर पर्दछ । चीजमा भएका प्रोटिनका जालोहरू एकै दिशामा तन्किन मद्दत पुर्याउनको लागि, कर्डलाई लाम्चो परेर तन्काउने गरिन्छ र डल्ला बनाईन्छ । यस किसिमको प्रक्रियाले मोजारेल्ला चीजमा रेसादार तथा सेतो चमकपनको विकास हुन्छ । गुणस्तरीय चीज बनाउनको लागि सधै ताजा दूध, एकै किसिमको दूधको बनावट, सहि जोर्डन, तापक्रम, चीज भ्याटमा गरिने कार्यहरूलाई एकरूपता दिनु आवश्यक हुन्छ, जसले चीज बनाउने समयमा हुने प्रक्रियाहरू एकै किसिमले परिवर्तन गर्न मद्दत पुर्दछ ।

कहिले काही दूधलाई घरको भान्सामा तताउँदा किन चीज जस्तो डल्लो पर्दछ भन्ने जिज्ञासा बेलामा नेपालमा देख्न वा सुन्न

पाइन्छ । प्रशोधन नगरिएको दूधमा विभिन्न प्रकारका इज्जाइम तथा सुक्ष्म जीवहरु सक्रिय रहन्छन् । यदि दूधलाई लामो समय सम्म भण्डारण गरिएको छ भने दूधमा अम्लियपानाको विकास हुन्छ र इज्जाइमहरूले केजिनलाई टुक्र्याउने काम गर्दछ । तथापि, जुन प्रक्रियाले दूधलाई भान्सामा तताउँदा, केजिनहरु जोडिएर तन्किन्छ, त्यो प्रक्रिया चीजको मोजारेल्ला गुणसंग मेल खाएको देखिन्छ । यसको अधारमा त्यस्तो दूधमा रेनेटोको जस्तो काम गर्ने इज्जाइम र दहिको जस्तो कल्वरमा भएका जीवाणु रहन सक्छन भन्ने अनुमान लगाउन सकिन्छ । यस्ता किसिमका इज्जाइम कसरी दूधमा प्रवेश भए भन्ने विषय अनुसन्धान कै विषय देखिन्छ । कुनै निश्चित गोठमा उत्पादन भएको दूधमा मात्र यस्तो प्रक्रिया देखिएको छ भने, नेपालका डेरी कम्पनीले त्यस्तो दूधलाई चीज मात्र बनाउनेको लागि प्रयोग गर्न सकिने सम्भावना हुन्छ ।

नेपालमा गुणस्तरीय मोजारेल्ला चीजको सानो सानो स्तरमा उत्पादन तथा बिक्रि वितरण गर्ने सम्भाबना निकै ज्यादा देखिन्छ । जसबाट मिल्क होलिडेको कारणले सडकमा फ्याक्नु पर्ने दूधको प्रयोग गर्न अवसर पनि मिल्दछ । आधुनिक चीज प्याकेजिंग केन्द्रहरूको स्थापना गरेर सानो स्तरमा तयार पारिएका चीजलाई लाप्ने समय सम्म गुणस्तर कायम राख्न वा लाप्ने दुरीमा दुवानी गर्न सम्भव हुन्छ । तसर्थे मोजारेल्ला चीज उत्पादनको लागि चीजको बनावट तथा उपयोगी गुणहरूमा ध्यान दिनु जरूरी हुन्छ ।

प्रस्तुत लेख, निम्न प्रकाशित पेपरहरू DOI 10.1007/s11483-017-9511-6, DOI 10.1007/s13197-017-2886-z, (DOI नम्बर इन्टर नेटमा टाइप गरेर हेर्न सकिन्छ) साथै लेखकको ज्ञान तथा अनुभावको आधारमा तयार पारिएको हो ।

\*डा राम राज पन्थी हाल युनिभर्सिटी कलेज कोर्क, आएरल्याण्डमा पोस्ट डक्टोरल रिसर्चरको रूपमा कर्यारत हुनुहुन्छ । उहाँले उक्त युनिभर्सिटीबाटै, चीज उत्पादन सम्बन्ध सन् २०१९ मा बिध्याबारिधि, वागेनीगन युनिभर्सिटी, नेदरल्याण्डबाट सन् २०१३ मा खाद्य बिज्ञान सम्बन्ध स्नातकोत्तर, र केन्द्रीय प्रबिधि क्याम्पस, हातिसार, धरानबाट सन् २००७ मा खाद्य प्रबिधिमा स्नातक अध्ययन पुरा गर्नु भएको छ । उहाँले डेरी बिज्ञान तथा अनुसन्धान सम्बन्ध विशेष रुचि राख्नु हुन्छ र उहाँका अन्तरास्ट्रिय डेरी जनलहरूमा अनुसन्धान प्रकाशित भएको पाइन्छ । आयरल्याण्डमा अनुसन्धानको क्रममा उहाले युटाह स्टेट युनिभर्सिटी अमेरिका तथा आरस युनिभर्सिटी डेनमार्कमा काम गरेर आफ्नो अन्तरास्ट्रिय अनुभव बढुल्न सफल हुनु भएको छ । उहाँले स्नातकोत्तरको लागि नेदरल्याण्डको NUFFIC Fellowship र बिध्याबारिधिको लागि आएरल्याण्डको Walsh Fellowship प्राप्त गर्न सफल हुनु भएको थियो । सम्पर्कको लागि इमेल: ram.raj.panthy@gmail.com ♦♦♦

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## NDSA Lobbying for Milk Quality Standard Revision

Nepal Dairy Science Association paid a courtesy call to congratulate newly appointed Secretary of Ministry of Agriculture and Livestock Development (MoALD) Dr. Yogendra Kumar Karki in his office. During the meeting, various dairy development issues, specially related to the need of upgrading and revising milk quality standards was discussed. NDSA has been continuously advising and justifying the government on the need of amending the current minimum mandatory quality standards for milk. In fact, Secretary



Dr. Karki made a very impromptu call to DG Mr. Upendra Ray, DFTQC to listen and discuss the milk quality standards revision proposals being put forwarded by NDSA. The milk quality standard revision proposals have been discussed and recommended in number of national dairy forums, which are lying as recommendations in number of proceedings and reports. Such a prompt action by secretary to solve the pertinent issues is very highly appreciated. NDSA Chairman Tek B Thapa, Vice-chairman RT Chaudhary and General Secretary Girdhar Bajracharya met Dr. Karki followed by the DG, DFTQC.

Thereafter, NDSA representatives met Upendra Ray, DG DFTQC and explained the need of revision of milk quality standards. In addition, NDSA also advised and requested DFTQC to induct dairy technologists in DFTQC; because DFTQC is doing lots of QC, monitoring and training and awareness related to milk and dairy products. Thus, by hiring dairy technologists, DFTQC can deliver better services to the dairy sector.

### "नियमित दूध सेवन गराई, रोग प्रतिरोधात्मक क्षमता बढाओै"

### दूध एक फाइदा अनेक

दूधमा चिल्लोपदार्थ, प्रोटीन, कार्बोहाइड्रेड, खनिज पदार्थ र भिटामिन जस्ता शरीरलाई आवश्यक पर्ने तत्वहरु पाइने हुंदा दूधलाई एक उत्तम खाद्य पदार्थको रूपमा लिईन्छ। चिल्लो पदार्थले शरीरलाई शक्ति प्रदान गर्दछ। ल्याक्टोजले तुरुन्त शक्ति प्रदान गरी शरीरमा स्फूर्ति आई पुनः काममा सक्रिय हुन मद्दत गर्दछ। प्रोटीनले शरीरको कोषिका, तन्तु लगायत शारीरिक वृद्धि गरी शरीरलाई शक्ति समेत प्रदान गर्दछ। दूधमा भिटामिन A, D, E, K, B-Complex पाईन्छन। यी भिटामिनले रतन्धो हुनबाट जोगाउने, प्रजनन क्षमताको विकास गर्ने तथा शारीरिक वृद्धि विकास, हाड तथा मांसपेशीहरु मजबुत पार्नुका साथै खाना खाने रुची जगाउँदछ। शरीर बृद्धिको लागि आवश्यक पर्ने लवणहरु क्यालसियम, फस्फोरस, म्यागनेसियम, क्लोरिन, पोटासियम, सोडियम आदि दूधमा पाईन्छन्। यसले शरीरिक सन्तुलन राख्नुका साथै शारीरिक विकास गर्दछ साथै दूधमा पाईने Lactoalbumin र Lactoglobulin ले Immunity power बढाउनमा समेत मद्दत गर्दछ। नेपालको खाद्य नियमावली अनुसार प्रशोधित १०० ग्राम दूधबाट करिब ६० क्यालोरी शक्ति प्राप्त हुन्छ।

हाल विश्वमा महामारीको रूपमा फैलिएको कोरोना भाइरस (COVID-19) लगायत अन्य रोगहरु संग लड्ने तथा शारीरिक तन्दुरुस्त बनाई राख्न दूध तथा दुग्ध पदार्थको नियमित सेवन गर्नु एक उत्तम विकल्प हो जसले रोग प्रतिरोधात्मक क्षमता अभिवृद्धि गराउनमा सहयोग पु-याउँछ।



**राष्ट्रिय दुग्ध विकास बोर्ड,**  
**ललितपुर, नेपाल।**  
**फोन. ०१-५५२५४००**

### CAFODAT: First College for B. Tech. (Dairy) and M.Sc. (Nutrition and Dietetics)

College of Applied Food and Dairy Technology – **CAFODAT** is the only College in Nepal offering M.Sc. in Nutrition and Dietetics and B. Tech Dairy Technology. CAFODAT nurtures excellence in learning and teaching, research, and advanced professional practice serving various international, national, and regional communities. **CAFODAT** envisions creating and developing talented and skilled human resources through quality education and training to produce high-quality food products analyzing nutritional values and balanced diets that impact the socio-economic transformation of the nation. **We offer** a Diploma in Food/ Dairy Technology, Bachelor of Food Science and Dairy Technology, master's in nutrition and Dietetics, Research work area for completing a thesis and creating food inspectors. Currently, the College plays a leading role in bridging the gap of nutritionist and dietician in the health sector and providing evidence-based research guiding community and institutional level implementation. Strong links and networks with governments, NGOs, and UN agencies already exist. Our programs are under expansion to cater to the community's new demands and needs in broader large-scale research relating to developmental and humanitarian nutrition.



Way Forward: College of Applied Food and Dairy Technology (CAFODAT) currently runs its Diploma, Bachelor, and Master courses through four departments – Department of Academics, Department of Dietetics, Department of Dairy Technology, and Department of International Affairs and Research. The IAR department is a state-of-art research center building on CAFODAT's technological innovation, creating scientific international and national collaborations, and fostering evidence-based community practices. Currently, this department has established Research Fellowship Endowment Program, FCHV appreciation scholarship, and academic partnership with National and international educational institutes and non-profit organizations. CAFODAT has also signed MoU with Nepal Dairy Science Association to collaborate in the areas of mutual interest specially in human resource development relating to training, research, exchange and dissemination of knowledge through workshops and so on; for a duration of four years starting January 2021.

*(Source: Prof. Ram Kumar Shrestha, D.Sc., MS, M.Sc., CAFODAT, Kumaripati, Lalitpur).*

### Whey Drink: A probable Beverage for Nepalese Market?

Whey is one of the major by-products in dairy industry produced during the processing of coagulated products. Due to the presence of significant quantity of organic/inorganic compounds like protein, lactose, vitamins and minerals, its biological oxygen demand is high giving rise to a major environmental and economic burden to be disposed as waste material.

However, whey being a source of precious nutrients can be utilized for the preparation of variety of alcoholic and non-alcoholic beverages. The predominant types of whey-based beverages are based on the blend of fruit juices and whey. The manufacture of whey-based beverages is gaining popularity in several parts of the world and could bear a great potential for Nepalese dairy market. Manufacture of whey beverages would not require much sophisticated technologies and appear to be economical and viable process for reutilizing the wasted milk nutrients into value added products. Whey based alcoholic beverages could also be a promising profit maker in Nepalese market.

With the advancement in technology and with the increase in number of dairy technocrats in Nepal, there is a need for utilizing such by-products. Further studies on its formulation and marketing would make it acceptable among the consumers. Nevertheless, utilization of these by products could be a profit maker for the dairy business professionals. Hence, I believe whey-based beverages has a nice potential for flourishing in Nepalese market.

*(Source: Shuvam Singh, NDSA member/Dairy Technologist, Nestle India Limited).*

## Congratulation to Prof. Bhesh Bhandari, University of Queensland, Australia

Professor Bhesh Bhandari from the University of Queensland, Australia has been awarded *Jiangsu Province International Cooperation Award* in January 2021 recognising his important contributions to the scientific and technological activities of the Jiangsu Province. Professor Bhandari is an Honorary Professor of Jiangnan University and has been collaborating with this University for the past 15 years. Jiangnan University is ranked number 1 worldwide in food science and technology research. The University of Queensland is ranked number 1 in Australia in the same discipline. Prof Bhandari has also visited several Universities in the Jiangsu Province. Jiangsu is the richest province in China.



### Highly Cited Researcher 2020 by Web of Science

Professor Bhandari has been awarded with the *Clarivate Highly Cited Researcher* by Web of Science in 2020. This award recognises the pioneers in the field over the last decade, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for field and year in the Web of Science™. Of the world's scientists and social scientists, *Clarivate™ Highly Cited Researchers* truly are one in 1,000. Professor Bhandari received the same award in 2015 and 2019. Professor Bhandari has published 8 edited books and more than 450 research papers. He has several innovative patents and one of his technologies (<https://progel.com.au/> and <https://www.perkii.com/our-story>) has been commercialised in Australia. The encapsulated lactoferrin (bioactive whey proteins) developed by Professor Bhandari has also been recently commercialised in Australia and expected to reach the export markets, particularly in infant formula manufacturing (<https://begabio.com/product-finder/inferrintm>).

### Australian Field Leader 2020 (under Engineering and Computer Science Category)

Professor Bhandari has been recognised as a lead researcher in Australia in food science and technology field in 2020 (<https://specialreports.theaustralian.com.au/1540291/>). Professor Bhandari has been working at The University of Queensland since 1993 and is one of the most influential research leaders in Australia. He has completed several projects on dairy research in collaboration with the major dairy industries in Australia. His work focuses on fundamental and development studies in relation to various dairy processes and products such as dairy powders, cream, butter and cheese.

### Editor-in-Chief of *Future Foods*

Professor Bhandari has been appointed as co-Editor-in-Chief of *Future Foods* by Elsevier in 2020 (<https://www.journals.elsevier.com/future-foods/>). *Future Foods* is a dedicated Journal to address the challenges of climate change and sustainability in food production. A transformation of the way food is currently manufactured and consumed is necessary to feed an ever-growing population whilst limiting its environmental impact. *Future Foods* publishes research that embodies the objective of developing new technologies and food sources for more sustainable food systems. Professor Bhandari is also an Editor of *Journal of Food Engineering*, a reputed international journal in food engineering. ♦♦♦

**Proprietor:** Tulu Tamang

**LUCKY**

- LUCKY SMOKED CHEESE
- LUCKY CUMIN CHEESE
- LUCKY CHILLI CHEESE
- LUCKY GAUDA CHEESE
- LUCKY NORMAL CHEESE
- LUCKY OLD CHEESE

**LUCKY DAIRY**  
Suryodaya-3, Pashupatinagar, Tinkhutre, Ilam (NEPAL)  
Contact : 0997-98495-0991, 9842657874  
Gmail : [luckycheese123@gmail.com](mailto:luckycheese123@gmail.com)

फोन नं. ०२१-८२०७०४

**शिवम् डेरी उद्योग**

बिराटनगर-४, मोरङ

श्रिंकण, दही, ध्यु, पनिर, जारदही, दौली र आँडाइमध्यको साथै विवाह, ब्रतबन्ध तथा पार्टिका लागि अर्डर पनि लिईन्छ।

नेपाल डेरी साईन्स एशोसियशन र राष्ट्रिय दुग्ध बिकास बोर्ड बिच सम्झौतापत्रमा हस्ताक्षर



नेपाल डेरी साईन्स एशोसियशनले २०७७ साल बैशाख २४-२६ गते नेपालका डेरी क्षेत्रमा सम्बद्ध सम्पूर्ण पक्ष मन्त्रालय, बोर्ड, बिभाग, एशोसियसनहरू, डेरी उद्योगी, ब्यबसायी, किसान, बैज्ञानिक, प्राविधिक, विध्यार्थी, शिक्षण संस्था आदी लगायत सबै पक्षको सहकार्य गर्न लागेको तीन दिने Asia Regional Dairy Conference cum Exhibition मा सहकार्य गर्नको लागी आज नेपाल डेरी साईन्स एशोसियशन र राष्ट्रिय दुग्ध बिकास बोर्ड बिचमा सम्झौतापत्रमा हस्ताक्षर भयो, सम्झौतापत्रमा एशोसियशनको तर्फबाट एशोसियशन अध्यक्ष श्री टेक बहादुर थापा र बोर्डको तर्फबाट कार्यकारी निर्देशक श्री बाबुकाजी पन्तले हस्ताक्षर गर्नुभयो । ♦♦♦

**MOU signed between Nepal Dairy Science Association and College of Applied Food and Dairy Technology**

Memorandum of Understanding (MOU) was signed between the Nepal Dairy Science Association (NDSA) and College of Applied Food and Dairy Technology (CAFODAT) wishing to establish cooperative relations, especially to Organize need-based training to the dairy and food sector stakeholders; Joint market driven research activities; Participation in seminars and academic meeting; Exchange of academic materials, publications and other information; Organize Short- term online courses; Collaborate in building capacity of faculty; and any other areas of mutual interest and benefits. MoU was signed on 3 January 2021 by Prof. Jagat Bahadur KC, Chairman CAFODAT and Tek Bahadur Thapa, Chairman, NDSA on behalf of their respective institutions. This MoU agreement will remain in force for a period of four (4) year subject to availability of funds to support projects. ♦♦♦



नयाँ वर्ष २०७८ को पावन अवसरमा सम्पूर्ण दुग्ध उत्पादक कृषक वर्ग, दुग्ध सहकारी, दुग्ध व्यवसायी/उद्यमी तथा समस्त उपभोक्ताहरूका साथै एशोसियसनका सम्पूर्ण सदस्य महानुभावहरूमा हार्दिक मंगलसय शुभकामना व्यक्त गर्दछौं ।

**नेपाल डेरी साईन्स एशोसियसन**

पो. बक्स. -७४४५, काठमाण्डौ  
[www.ndsa.org.np](http://www.ndsa.org.np)

"Technology For Sustainable Development"



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(2 years/ 4 Semesters)
  - Bachelor in
    - **Food Technology**  
(4 years/ 8 Semesters)
    - **Dairy Technology**  
(4 years/ 8 Semesters)
    - Diploma in
      - **Food & Dairy Technology**  
(3 years/ 6 Semesters)



**College of Applied Food and Dairy Technology**  
**CAFODAT**

Affiliated to Purbanchal University & CTEVT

Kumaripati, Lalitpur ०१- ५५५४५४३, ५५५३५६  
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हुन्ह स्वस्थ जीवन



दुग्ध विकास संस्थान

लेनबाट: ०१- ४४११३८६ | बालाट्टा: ०१- ४३९९०२८

## हादिक समवेदना

A distinguished dairyman Arun Shrestha left for heavenly abode early hour of this morning (Mangshir 17, 2077). He had a distinguished career in Dairy Development Corporation. He had been Executive Director of National Development Board, who contributed greatly significantly for human resource development for the dairy sector. He lobbied with bilateral agencies for strengthening dairy technology related manpower; and more than 50 Nepalese got fellowship to study dairy technology in India. He was very closely associated with the College of Applied Food and Dairy technology (CAFODAT) which is the first and only college offering dairy technology courses in Nepal. He was the life member and past president of Nepal Dairy Science Association. He was awarded life time achievement award by National Dairy Development Board during 2019. Rest in peace and eternity; and express our sincere condolence to the bereaved family members.



## हादिक समवेदना

हाम्रो यस नेपाल डेरी साइन्स एशोसियशनका आजीवन सदस्य तथा प्रदेश दुईका संयोजक महेन्द्र यादवजी को यहि मिती २०७७/७/३ गते मोरसाईकल दुर्घटनामा निधन भएको हुँदा मृतामा प्रति श्रद्धाङ्गली तथा परिवारमा समवेदना व्यक्त गर्न चाहन्छौं। उहाँ लामो समय सम्म दुग्ध विकास संस्थानमा कार्यरत हुनुहुन्थ्यो।



## हादिक समवेदना

Rinji Sherpa, one of the best yak cheese makers, recipient of Gorkha Dakchhin Bahu and as well expert, and member of Nepal Dairy Science Association has left us on 28 Kartik 2077, a very sad moment for the entire Dairy fraternity and family members. May his soul Rest-in-Peace and eternity, and condolences to the bereaved family. He has served as Manager of Yak Cheese Centers, DDC in various part of the country for a long time.



## हादिक समवेदना

Nepal Dairy Science Association team handed over the honour that was bestowed on Shri Pearl JB Rana during the 9th AGM on 10th of Aswin 2076 to his family members today. This was done with the consent of family members. He passed away on 26th Ashwin, 2076.



NDSA expresses condolence to the bereaved family members and prays almighty for his soul Rest in Peace and eternity.

He was the Executive Chairman of the Dairy Development Corporation for many years.

## हादिक समवेदना

हाम्रा परम मित्र तथा नेपाल डेरी साइन्स एशोसियशनका संस्थापक सदस्य, निर्दर र ईमान्दार, तथा साहसी बरिष्ठ डेरी विज्ञ भैरब प्रसाद मानन्धरको यहि कार्तिक १५ गते २०७७ का दिन अमेरिकामा देहवसान भएको खबरले हामी नेपाल डेरी साइन्स एशोसियशनका सम्पूर्ण सदस्यहरूलाई मर्माहित तुल्याएको छ। यस दुखद परिस्थितीमा मृतामाको चिर शान्तिको कामना गर्दै शोकाकूल परिवारमा समवेदना प्रकट गर्दछौं। साथै यस बिषम परिस्थितीमा ईश्वरले सम्पूर्ण परिवार तथा आफन्तमा धैर्य धारण गर्ने क्षमता प्रदान गर्न भनि ईश्वरसँग प्रार्थना गर्दछौं। उहाँ लामो समय सम्म दुग्ध विकास संस्थानमा आयोजना प्रमुख लगायत विभिन्न पदमा कार्यरत हुनुहुन्थ्यो।



## हादिक समवेदना

हाम्रा परम मित्र आजीवन सदस्य तथा प्रदेश २ संयोजक राम अवतार मन्डलज्युको २०७६ साल असोज महिनामा देहावसान भएको खबरले हामी सम्पूर्ण डेरी एशोसियशन परिवार मर्माहित तथा दुखी भएका छौं। उहाँको तेरौं दिनमा एशोसियशनको तर्फबाट अध्यक्ष, उपाध्यक्ष तथा सल्लाहकारहरूले परिवारजनसंग भेट गरी समवेदना पत्र पेश गरेका थिएँ। उहाँ लामो समय सम्म दुग्ध विकास संस्थानको आयोजना प्रमुख लगायत विभिन्न पदमा कार्यरत हुनुहुन्थ्यो।



हादिक श्रद्धाङ्गली  
तथा  
समवेदना



नेपाल डेरी साइन्स एशोसियशन परिवार मृतक सबैमा हादिक श्रद्धाङ्गली प्रदान गर्दछौं तथा मृतामाको चिरशान्तिको कामना गर्दछौं।

## नेप्स कफी नेपाली स्वादमा

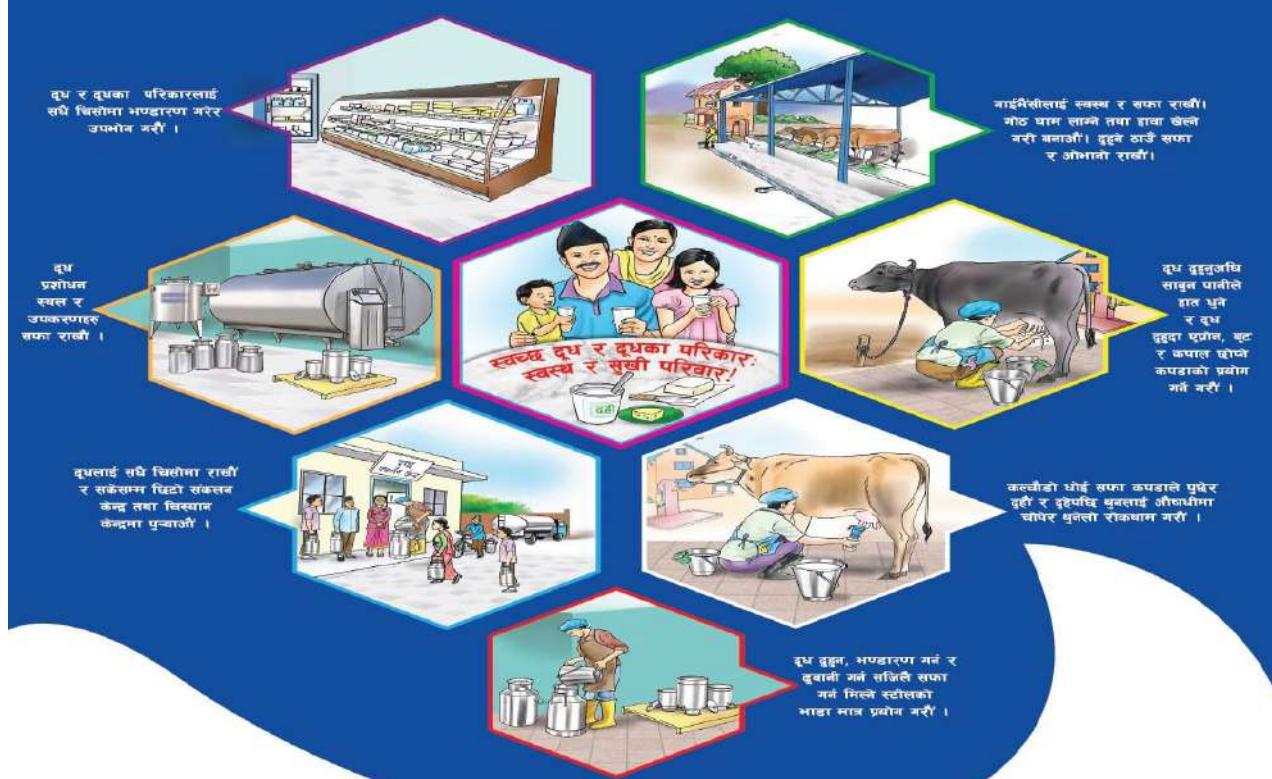
चितवनको खैरहनीमा आफ्नो कार्यालय रहेको नेप्स कफी एण्ड फुड प्रोडक्ट प्रा.लि.ले नेपाली बजारमा सम्भवत पहिलोपल्ट इन्स्टान्ट प्रिमिक्स कफीको रूपमा नेप्स कफीलाई बजारमा ल्याएको छ। कफीका पारखीहरुको लागि मध्यनजर गर्दै जुनसुकै वर्ग, स्तर र न्युन आयस्तो त भएका व्यक्तिहरुको पहुँचले प्रयोग गर्न मिल्ने उद्देश्यका साथ नेप्स कफीका बिभिन्न उत्पादनहरूलाई बजारमा ल्याएको प्रा.लि.का प्रबन्ध निर्देशक रमेश खड्काले जानकारी दिनुभयो।

सहज र सुलभ तरिकाले विभिन्न साना, दूला आकर्षक साइजहरूमा बजारमा उपलब्ध भएकै कारण नेप्स कफीको बजार माग बढ्दो छ। छिटो तयार गर्न सकिने हुँदा यसलाई जुनसुकै प्रयोजनका लागि जहाँसुकै सजिलै प्रयोगमा ल्याउन सकिने हुँदा यसलाई ग्राहकहरूले अत्याधिक रुचाइएको खड्काले बताउनुभयो। प्रिमिक्स तयारी नेप्स कफि प्राइभेट गाडी, अफिस, प्याक्ट्री, कन्स्ट्रक्शन, घर जहाँ पनि सजिलै उम्लएको तातो पानी थर्मस वा अन्य बिकल्पहरुको प्रयोग गरि सजिलै बनाउन सकिने चिनि भएको र चिनि नभएको दुबैमा स्वादमा डिस्पोजेबल पेपर कप सहित ग्राहकको आवश्यकतालाई ध्यान दिँदै उपलब्ध गराएको छौ। साना होटल ब्यबसायको लागि कफि वेन्डिङ मेशिन पनि बजारमा उपलब्ध गराइएको सञ्चालकहरु बताउँछन्। यसले समयको बचत गरि सुलभ तरिकाले ग्यासको बचत गर्नुको साटो बिजुली समेत खपत गरी आफै देशको उर्जा खपतमा समेत मदत पुर्याउने सञ्चालकहरुको दावी छ।

आकर्षक साइज, उच्चतम मूल्य र सहज रूपमा जहाँसुकै उपलब्ध हुने हुँदा नेपाली बजारमा नेप्स कफीले छिट्टै आफ्नो स्थान पाउन थाले को कफी पारखीहरुको भनाई छ। नेप्स कफी एण्ड फुड प्रोडक्ट प्रा.लि.ले इन्स्टान्ट प्रिमिक्स कफीकोसँगै नेप्स मसला टी, नेप्स टि कफी ह्वाइटनर लगायत अन्य आकर्षक उत्पादनहरू बिभिन्न तौल र साइजमा बजारमा ल्याएको छ। ♦♦♦

(स्रोत: - रमेश खड्का, संस्थापक अध्यक्ष, नेप्स कफी एण्ड फुड प्रोडक्ट्स प्रा.लि.)

## स्वच्छ दूध र दुग्ध परिकार उत्पादन गर्ने असल अभ्यासहरू



नेपाल सरकार  
कृषि तथा पशुपन्थी विकास मन्त्रालय  
नेपाल लाइमस्टक सेक्टर इनोवेशन आयोजना  
हरिहरभवन, ललितपुर  
फोन: +९७७ १ ५०१०००१, ५५५४९०६  
ईमेल: [pmu@nlsip.gov.np](mailto:pmu@nlsip.gov.np), वेबसाइट: [www.nlsip.gov.np](http://www.nlsip.gov.np)



**Global dairy prices comparison between December 2020 and March 2021**

**1. Global dairy prices in USD/MT (As updated on 15, Dec,2020)** It is up by 1.3 % since last fortnight (Source: DAIRY NEWS 7X7; January 15, 2020)

Anhydrous milk fat	: 4360 (+1.9%)
Butter	: 4221(+6.0%)
Cheddar Cheese	: 3893(+4.2%)
Lactose	: 1024(+1.5%)
SMP	: 2930(+1.2%)
WMP	: 3210(+0.5%)

**Prices in India:**

<u>Buffalo milk 6.5% fat and 9 % SNF in Rs /kg</u>	
• Amul	: 39-42
• State federations	: 36-40
• Private players	: 36- 40

Cow milk on TS basis in South India for 3.5% to 8.5 % SNF

- Rs 215-Rs 260 per kg TS for 12%TS milk

Cow milk in Maharashtra State 3.5% fat 8.5 % SNF in Rs/kg

- Rs 28.00- Rs 29.00 landed at the plant ( Rs 25/ltr to farmers)

SMP prices in Rs per kg

- Rs 230-Rs 270

Butter

- Rs 290-Rs 305 per Kg

Ghee Prices for 15 kgs tin

- Rs 5200-Rs 6300

**2. Global dairy prices in USD/MT(As updated on Mar 16, 2021).** It is down by 3.8 % since last fortnight and average Price index is USD 4089/MT.

Anhydrous milk fat	: 6155 (+3.7%)
Butter	: 5659(-2.8%)
Cheddar Cheese	: 4250(-0.3%)
Lactose	: 1392(+8.6%)
SMP	: 3350(+0.7%)
WMP	: 4083(-6.2%)

**Prices in India:**

<u>Buffalo milk 6.5% fat and 9 % SNF in Rs /kg</u>	
• Amul	: 42-44
• State federations	: 41-43
• Private players	: 42- 44.0

Cow milk on TS basis in South India for 3.5% to 8.5 % SNF

- Rs 240-Rs 260 per kg TS for 12%TS milk

Cow milk in Maharashtra State 3.5% fat 8.5 % SNF in Rs/kg

- Rs 34.00- Rs 35.50 landed at the plant ( Rs 30-32.00/ltr to farmers)

SMP prices in Rs per kg

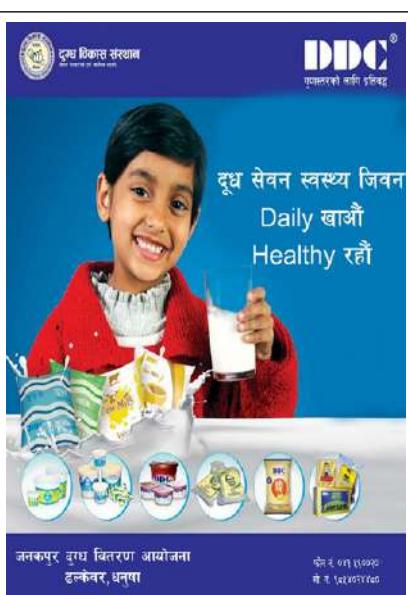
- Rs 280-Rs 320

Butter

- Rs 300-Rs 325 per Kg

Ghee Prices for 15 kgs tin

- Rs 6200-Rs 6500



## NDSA Newsletter विमोचन तथा नयाँ वर्ष २०७६ को शुभकामना आदान प्रदान कार्यक्रम

नेपाल डेरी साईन्स एशोसियशनको मुख्यपत्रको रूपमा रहेको NDSA Newsletter Vol 5 (No.1) & 6 (No.1) Baisakh 2076 (April, 2019) को विमोचन तथा नयाँ वर्ष २०७६ को शुभकामना आदान प्रदान कार्यक्रम २०७६ वैशाख १६ गतेका दिन याक प्यालेस पुलचोकमा सम्पन्न भयो । नेपाल डेरी साईन्स एशोसियशनले आयोजना गरेको Newsletter विमोचन कार्यक्रममा कृषि तथा पशुपन्थी विकास मन्त्रालय, पशुसेवा विभाग, राष्ट्रिय दूध विकास बोर्ड, दूध विकास संस्थान, डेरी उधेग संघ, नेपाल डेरी एशोसियशन, कलेज अफ एप्लाइड फुड एण्ड डेरी टेक्नोलोजी, नेफोस्टा, संघसंस्था लगायत व्यवसायी, डेरी प्राविधिक तथा वैज्ञानिकहरूकोहरू बाकलो उपस्थिती रहेको थियो । सो कार्यक्रमको प्रमुख अतिथिको आतिथ्यता ग्रहण माननिय कृषि तथा पशुपन्थी विकास राज्यमन्त्री रामकुमारी चौधरीज्युले गर्नुभएको थियो ।



प्रमुख अतिथि माननिय कृषि तथा पशुपन्थी विकास राज्यमन्त्री रामकुमारी चौधरी ज्युले आफ्नो मन्तव्यका क्रममा नेपाल डेरी साईन्स एशोसियशन जस्ता वैज्ञानिक तथा प्राविधिक एशोसियशनहरूको भूमिका र सहयोग मन्त्रालय र दूध क्षेत्रमा महत्वपूर्ण हुने धारणा व्यक्त गर्नुभयो । दूध उधेगहरूलाई आवश्यक पर्ने ज्ञान सीप्रदान गरी अन्तराष्ट्रिय बजारमा प्रतिस्पर्धा गर्न सक्ने क्षमताको दूध पदार्थ उत्पादनमा आवश्यक सहयोग गर्नको लागी नेपाल डेरी साईन्स एशोसियशनलाई आग्रह गर्नुभयो । नेपालले आफ्ना उत्पादनलाई FMD Free बनाउन सके नेपाली उत्पादन छिमेकी मुलुक तथा अन्य मुलुकमा निर्यात गर्न सकिने कुरामा ध्यान दिन आग्रह गर्नुभयो । उहाँले मन्त्रालयले विदेशी पाउडर दूधको आयात रोकन गरेको निर्णयले नेपालमै पाउडर दूध उत्पादन तथा खपत हुने व्यवस्था मिलाउन, देशलाई दूधमा आत्मसन्तर्भ बनाउन र बेलाबेलामा हुने मिल्क होलिडे रोकन सहयोग हुने विश्वास व्यक्त गर्नुभयो । उहाँले दूध पदार्थको गुणस्तर बढाउनलाई सरकारले गरेको प्रयासका बारेमा पनि कार्यक्रममा जानकारी गराउनुभयो । नेपाल डेरी साईन्स एशोसियशनले मन्त्रालय र दूध क्षेत्रको लागी प्रदान गर्ने सल्लाह सुझाव आग्रह र पूर्वाग्रह रहित हुने विश्वास पनि व्यक्त गर्नुभयो । नेपाल डेरी साईन्स एशोसियशनले दूध क्षेत्रको विकासको लागी दिने सकारात्मक सल्लाह सुझाव लिनको लागी मन्त्रालयको ढोका सधै खुल्ला रहने जानकारी गराउनुभयो ।



पाउडर दूधको आयात रोकन गरेको निर्णयले नेपालमै पाउडर दूध उत्पादन तथा खपत हुने व्यवस्था मिलाउन, देशलाई दूधमा आत्मसन्तर्भ बनाउन र बेलाबेलामा हुने मिल्क होलिडे रोकन सहयोग हुने विश्वास व्यक्त गर्नुभयो । उहाँले दूध पदार्थको गुणस्तर बढाउनलाई सरकारले गरेको प्रयासका बारेमा पनि कार्यक्रममा जानकारी गराउनुभयो । नेपाल डेरी साईन्स एशोसियशनले मन्त्रालय र दूध क्षेत्रको लागी प्रदान गर्ने सल्लाह सुझाव आग्रह र पूर्वाग्रह रहित हुने विश्वास पनि व्यक्त गर्नुभयो । नेपाल डेरी साईन्स एशोसियशनले दूध क्षेत्रको विकासको लागी दिने सकारात्मक सल्लाह सुझाव लिनको लागी मन्त्रालयको ढोका सधै खुल्ला रहने जानकारी गराउनुभयो ।

नेपाल डेरी साईन्स एशोसियशनका अध्यक्ष श्री टेक बहादुर थापाले NDSA Newsletter मा रहेका विषयबस्तु र यसको महत्वको बारेमा प्रकाश पार्दै दूध उधेगहरूलाई चाहिने ज्ञान सीप्रदान गर्नुभयो । हाल नेपालमा नयाँ पाउडर प्लान्ट बनाउने प्रतिस्पर्धा चलिरहेको बेलामा पहिले हाल देशमा रहेका पाउडर प्लान्ट पूर्ण क्षमतामा संचालन गर्नुपर्ने तर्फ ध्यान दिन राष्ट्रिय दूध विकास बोर्ड र मन्त्रालयलाई आग्रह गर्नुभयो । हाल हरेक प्रदेशमा छुट्टै डेरी बोर्ड गठन प्रक्रियामा रहेकोमा ती बोर्डले राष्ट्रिय दूध विकास बोर्ड संग सहकार्य गर्नुपर्ने सुझाव दिनुभयो तथा नेपाल डेरी साईन्स एशोसियशनले दूध क्षेत्रको विकासको लागी नेपाल सरकारलाई आवश्यक पर्ने सल्लाह सुझाब तथा प्राविधिक सहयोगका लागि सदैब तत्पर रहेको जानकारी गराउनु भयो साथै नेपाल डेरी साईन्स एशोसियशनले २०७७ बैशाखमा आयोजना गर्न लागेको अन्तराष्ट्रिय गोष्ठी तथा प्रदेशनीमा आयोजक कमिटिको सदस्यको रूपमा हातेमालो गर्न र सहभागी हुन सबैमा आग्रह पनि गर्नुभयो ।

नेपाल डेरी एशोसियशनका अध्यक्ष राधाकृष्ण सापकोटा, डेरी उधेग संघ अध्यक्ष अरनिको राजभण्डारी, कलेज अफ एप्लाइड फुड एण्ड डेरी टेक्नोलोजीका अध्यक्ष तथा पूर्वाङ्गल विश्वविद्यालयका पूर्व उपकुलपति प्रोफेसर जगत बहादुर के.सी, दूध विकास संस्थानका महाप्रबन्धक इश्वरीराज न्यौपाने, नेपाल डेरी प्रा.लि का अध्यक्ष तथा पूर्वसचिव डा. हेलम्बराज भण्डारी र नेपाल डेरी साईन्स एशोसियशनका सल्लाकार राजेन्द्र गोपाल श्रेष्ठले हाल दूध क्षेत्रमा रहेका चुनौतीमा चर्चा गर्दै यस क्षेत्रको समस्या समाधान गर्न सबै सरोकारवालाहरू बिच छलफल र सहकार्य हुनुपर्नेमा जोड दिनुभयो । राष्ट्रिय दूध विकास बोर्डका कार्यकारी निर्देशक बाबुकाजी पन्तले दूध क्षेत्रका समस्या समाधानमा बोर्डको भूमिका र कार्यका बारेमा बताउनुभएको थियो र यस्तो छलफलको अवसर प्रदान गरेकोमा नेपाल डेरी एशोसियशनलाई धन्यवाद ज्ञापन गरी यस कार्यक्रम सम्पन्न



यस Newsletter विमोचन कार्यक्रमको संचालन नेपाल डेरी साईन्स एशोसियशनका महासचिव गिरिधर बज्राचार्यले गर्नुभएको थियो भने कार्यक्रममा शुभकामना मन्तव्य नेपाल डेरी साईन्स एशोसियशनका उपाध्यक्ष राम तपेश्वर चौधरीले दिनुभएको थियो र नेपाल डेरी साईन्स एशोसियशनका प्रमुख सम्पादक श्री सियाराम प्रसाद सिंहले सम्पुर्ण सहभागीहरूमा धन्यवाद ज्ञापन गरी यस कार्यक्रम सम्पन्न

गर्नेको लागी महत्वपूर्ण भूमिका निभाउनु हुने यस एशोसियशनका कमिटी सदस्यहरूलाई पनि धन्यवाद ज्ञापन गर्दै कार्यक्रम समाप्त हुनु भएको घोषणा पनि गर्नुभयो ।

बिमोचन कार्यक्रम पछी आयोजित चियापान कार्यक्रममा राष्ट्रिय दुग्ध विकास बोर्ड सदस्य तथा व्यवसायी सुमित केडिया, नेफोस्टा अध्यक्ष नवराज उपाध्याय, व्यवसायी अजय सरावगी लगायत अन्य सहभागीले एकआपसमा नयाँ वर्ष २०७६ को शुभकामना आदान प्रदान गर्नुभयो । ♦ ♦ ♦

(स्रोत- शंकर अधिकारी, कार्यकारी सदस्य)

### Talk program by Prof. Dr. Nagendra Shah, University of Hong Kong

Nepal Dairy Science Association organised a Talk program by Prof. Dr. Nagendra Shah on Dairy based functional foods. It was organised in collaboration NDDB in their seminar hall. The programme was attended by NDDB staff members, advisors and members of NDSA, Young Technologist, DIA Members, NDDB Members and Members from DDC.

Dr. Nagendra Shah is a Professor of Food Science, Food and Nutritional Science; School of Biological Sciences, The University of Hong Kong, Hong Kong ([www.biosch.hku.hk/staff/nps/nps.html](http://www.biosch.hku.hk/staff/nps/nps.html)). He is a Fellow-Australian Inst. of Food Sci. & Technol.; Fellow-American Dairy Sci. Assoc.; Fellow-Inst. of Food Technologists; Editor, LWT Food Science & Technology; and Assoc. Editor, Journal of Food Science; as well Thompson Reuters highly cited researcher 2015, 2016, 2017, 2018; ESI top 1% scholar (<http://scholar.google.com.hk/citations?user=nnAL-58AAAAJ&hl=en>) .

NDSA would like to thank Prof. Shah including the talk programme participants. A token of love was offered to him by NDSA Chairman Tek B. Thapa during closing of the programme. NDSA General Secretary Giridhar Bajracharya was mastering the ceremony. ♦ ♦ ♦



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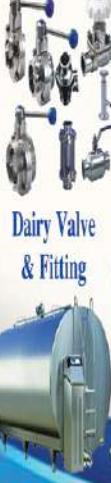
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## Web conference report on Raw milk Quality, Issues and Ways for Improvement

Nepal Dairy Science Association organized a web conference on Raw milk Quality, Issues and Ways for Improvement on 30 May 2020 (2077/2/18) on the eve of World Milk day 2020. Webinar was chaired and moderated by Tek Bahadur Thapa, Chairman, Nepal Dairy Science Association. Main speakers of webinar are; Siyaram Prasad Singh , Chief-editor, NDSA and Ex. GM, DDC; Niranjan Shrestha, CEO Sujal dairy, Pokhara; Uttam Kumar Bhattarai, Ex. DG, DFTQC & Formerly Secretary, Ministry of Agriculture; Dr. Rajendra Yadav, ED, NDDB; Bishworam Khadka , Director , Kharipati dairy, Bhaktapur and N. P. Devkota, Chairman, CDCAN.

Key issues raised by speakers are summarized as below;

Siyaram Prasad Singh raised following Issues;

Compositionally low-quality raw milk (Fat and SNF) coming to most of the dairy plants; High bacteriological load in raw milk causing acidity development and souring; High acidic /sour milk coming to milk plant; Adulteration of raw milk is prominent. It includes salt, sugar, starch, urea, detergents, preservatives etc.; Consumers complain regarding the taste and flavor of the market milk frequently; Lower yield and poor product quality; Low shelf life of the milk and milk products; Higher processing loss due to spoilage of milk and milk products during heat treatment; and Frequent higher number of coliform counts detected in market milk and milk products inviting legal action.

Ways out for improvement suggested;

Introduce two times milk collection compulsory in all primary milk collection units. This will improve the composition and freshness of the milk; Develop milk cooling facilities at all potential collection centers and run them; Sour milk should be heavily penalized if received; Develop separate reception and processing facilities for sour milk utilization; Bigger plants should add casein/lactose making plant to handle sour milk to their processing premises; Adulteration test should be done more frequently at all chilling centers and milk plant. Adulterated milk should be rejected if possible, otherwise such milk should not be paid and suppliers must be penalized by not receiving milk for a period of time; and Last but important to raise the legal standard of market milk especially SNF level. Existing standard of SNF for cow milk is 7.5% and whole milk and standard is 8%. This is lower than actual average standard of milk produced by farmers.

Niranjan Shrestha explained All milk does not come from udder causing milk quality problems; Proper chilling vat temperature is not maintained. Should be below 4 deg C; Timely transportation of milk from chilling centers; Test of Na, potassium, and other quality indicator test to be carried out; Source of neutralizer and adulteration to be checked; Protein test to be considered; Sour milk is drained; Shelf life of the milk and milk product is low; and RM value has improved

Uttam Kumar Bhattarai emphasized on Training of milk producers is required; All processing plants should have qualified technical man power; DFTQC should increase monitoring; GMP, COP to be implemented; Mega project is required to overall quality improvement of dairy sector; WTO requirement to be met; and SMP import to be discouraged and local milk to be given priority; and reduce cost of milk production.

Dr. Rajendra Yadav said Food safety and food security is world problem; Awareness needed; NDDB will be focusing on quality; and Honesty is of prime importance in quality improvement and maintenance.

Bishworam Khadka was of opinion Mandatory standard for raw milk is needed; Quality has improved in recent time; Effective and timely transportation is required; Main coordinator for quality issues is not cleared. Whether it is NDDB, DFTQC or concerned province; There is no incentive for dairy sector by government; and Economic package is needed urgently in present condition

N. P. Devkota said Unfair competition by private dairies in milk collection especially in lean season/in milk shortage situation; and Cooperatives are getting weaker in their management

Comments and suggestions

Liladhar Sharma, Dang commented to Keep sick and healthy animals separately; Healthy and good quality animal is much important and Main source of contamination is animal

Iswori Raj Neupane advised recent directive issued by DFTQC is to be implemented seriously.

Rajendra Gopal Shrestha suggested Commitment of dairy industry is of prime importance to improve and maintain the quality; Product diversification is needed and Minimum 30-minute MBRT test is must for raw milk, but recommended more than 1 hour.

Navaraj Upadhyay said Import of liquid milk and SMP from India to be discontinued.

Damodar Dhakal was of opinion that Quality of feed is a major issue. Minimum 20 % protein is needed in feed; DDC has introduced premium pricing such as milk with more than 4.5 Fat and 8.3% SNF is paid extra price; and Basic technical training is needed.

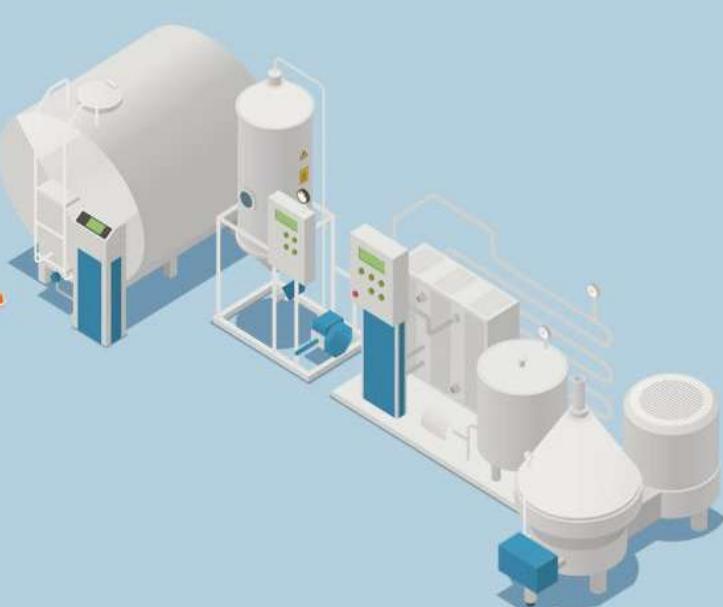
Conference recommendation:

1. Two times collection: Morning and evening milk collection to be made compulsory in all primary cooperatives and collection centers; Strict directive is to be issued by NDDB in coordination with DFTQC to all dairy associations, dairy cooperative unions, DDC and all others not covered under these to make necessary arrangement; one-month time should be provided for necessary preparation; and Time bound monitoring is to be made by NDDB/DFTQC.
2. Introduce heavy penalty for sour milk.
3. Adulterated milk must be rejected. If test is found positive after receiving the milk, no payment should be made and milk purchase from such supplier/farmer should be stopped for time being.
4. Subsidy and low interest loan should be provided to the dairy plant willing to set up casein/lactose plant to utilize sour milk.
5. Compositional standard of all type of market milk should be revised with consultation of NDDB. A separate team of specialist may be formed to provide unbiased recommendation.
6. More subsidies should be provided to dairy cooperatives, individuals, dairy enterprises to purchase bulk cooling tank.
7. A mega project should be formulated to finance, provide technical support and other necessary support to all levels of dairy activities for overall quality improvement. NDDB and DFTQC should jointly be made implementing agency. ♦ ♦ ♦

(Source: Tek B. Thapa and Siyaram Prasad Singh)



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### Yak Chhurpi : A Souvenir from Dolakha

Chhurpi is a hard cheese traditionally made by chauri farmers in the Himalayan region, particularly in high altitude areas. It can also be found in Tibet, China, India and Bhutan. It is prepared in the home or in the herder's hut "goth" from skimmed milk or buttermilk. The milk is boiled, and the solid mass that is obtained is separated from the liquid, wrapped and hung in a thin cloth to drain out excess liquid. It is then pressed, cut into strips, smoked and dried. Dry chhurpi is usually consumed by being re-moistened in the mouth and then chewed like gum, but sometimes it is powdered and used. Chauri farming and chhurpi production is a traditional occupation of people of Dolakha especially residing in the altitudes above 2500 meters. Various areas of Kalinchowk, Bigu and Gaurishankhar rural municipalities are famous for chauri farming and chhurpi production.



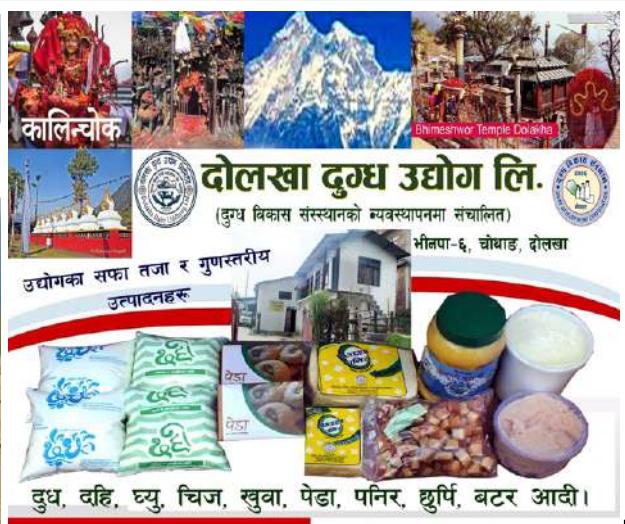
Estimated Chauri population and herd numbers in Upper Slopes of Dolakha district are as follows:

Areas	Rural Municipalities	No. of Herds	No. of chauri per herd	Dependant population
Kalinchowk, Kuri and Tareghyang	Kalinchowk Rural Municipality	40	20-25	200
Bigu, Gogar, Lamabagar	Bigu Rural Municipality	30	12-25	120
Chordung and Thodung	Gaurishankhar Rural Municipality	38	20-24	125

The annual chhurpi production from these area ranges from 20MT to 25MT and butter production ranges from 12 MT to 15 MT. The products are locally sold in the markets like kalinchowk, Singati, Charikot, Jiri, Deurali and Mude and even in Kathmandu city.

At present due to various causes like depletion of pasture land, less interest of the young generation in the ancestral occupation, lack of access to proper animal health facilities and lack of proper training and financial aids the chauri farming and chhurpi production is decreasing day by day. Thus there is a need of proper governmental support and innovative technologies for the chauri farmers to enhance the quantity and quality of the traditional product chhurpi. ♦ ♦ ♦

(Source: Chakrabarty Poudel, Managing Director, Dolakha Dairy Ltd., Charikot)



## National Workshop organised on Availability and Requirement of Dairy Science and Technology Related Human Resources in Nepal; 11 June 2019 (2076)

One-day Workshop on *Availability and Requirement of Dairy Science and Technology Related Human Resources in Nepal* was jointly organised by **College of Applied Food and Dairy Technology (CAFODAT); Department of Food Technology and Quality Control (DFTQC); National Dairy Development Board (NDDB); Dairy Development Corporation (DDC); Nepal Dairy Science Association (NDSA); Nepal Dairy Association (NDA); Dairy Industries Association (DIA) and Nepal Food Scientist and Technologist Association of Nepal (NEFOSTA)**, being supported by the **Food and Agriculture Organization (FAO) and Nepal Livestock Sector Innovation Project/GoN**; ; 11 June, 2019 (2076).



Major objective was to assess the existing scenario and future requirements of dairy science & technology related human resources in Nepal, and to develop strategies to fulfil the HRD gap.

The workshop was opened by Chief Guest Chakra Pani Khanal, Hon Minister of Agriculture and Livestock development; and Prof. Jagat Bahadur K.C., Chairperson, Workshop Organizing Committee chaired the session.

Special Guest Prof. Dr. Bhesh Bhandari from University of Queensland, Australia presented a paper entitled "Needs of skill and innovation through R&D for the dairy industry growth".

NDSA Chairman Tek B. Thapa chaired the Technical session, where number of presentations related to the theme were presented by the organising institutions.

Among the special guests present included Prof. Dr. Ghanashyam Lal Das, V.C., Purbanchal University, Dr. Yubak Dhoj G.C., Agriculture Secretary, Ministry of Agriculture and Livestock Development; DGs, Deans, and others.



The meeting made series of recommendations, and details are available in the proceedings, and can be accessed online in the organiser's websites. One of the key recommendations is quoted here.

**Quote:** "Universities should grant affiliations to the dairy technology colleges to produce at least 60 dairy technology graduates per year for the first five year and then subsequently to meet the targets in the second, third and fourth five-year dairy plan period till 2039. CAFODAT should regularize the graduate programme in dairy technology to meet the national needs and targets. Similarly, CTEVT should limit affiliations to make 1:2 ratio of graduates to diploma level dairy technologists and technicians (120 diploma per year) to meet the national human resource need for the projected 20-year dairy plan period". **Unquote.**

### International Dairy Federation (IDF)

- Since 1903, IDF is a recognized international authority which contributes actively to the development of science-based standards for the dairy sector. Its headquarters based in Brussels.
- International Dairy Federation is the leading source of scientific and technical expertise for all stakeholders of the dairy chain.
- IDF vision: "Helping to nourish the world with safe and sustainable dairy"
- IDF members are organized in National Committees, which are national associations composed of representatives of all dairy-related national interest groups including dairy farmers, dairy processing industry, dairy suppliers, academics and governments/food control authorities.

(Source: <https://www.fil-idf.org>).

## बहसमा दुग्ध क्षेत्र



निरन्जन तिमिल्सेना\*

देश संघीय ढाँचामा प्रवेश गरेसँगै समग्र कृषि अर्थतन्त्रमा धानपछीको दोस्रो ठूलो स्थान ओगटेको दुग्ध क्षेत्रलाई पनि समग्र कृषि क्षेत्रसँगै संघ, प्रदेश र स्थानिय निकायको साभा कार्यक्षेत्रको रूपमा संविधानमा परिभाषित गरिएको छ, तरपनि हालसम्म कुनैपनि तहले यस क्षेत्रको बिकासलाई प्राथमिकतामा राखी गम्भीरताको साथ योजना बनाई अघि बद्नसकेको देखिदैन। हाल दुग्ध क्षेत्रको बिकासका लागी भनेर केन्द्र र प्रदेशमा छुट्टाछुट्टै दुग्ध विकास बोर्डहरु गठन भएका छन्। बिना योजना, बिना समन्वय, सिमित बजेट, सिमित अधिकार र कार्यक्षेत्रका साथ गठन गरिएका बोर्डहरु मात्रै दलिय कार्यकर्ता भर्ति केन्द्रका रूपमा परिणत भएका छन्, जसको कारण समग्र दुग्ध क्षेत्र नै अति राजनीतीकरणको चपेटामा परेको छ। छिमेकी देश भारतको कुरा गर्ने हो भनेपनि सन् १९६५ मा राष्ट्रिय डेरी बिकास बोर्ड गठन भएपछी त्यहाँको दुग्ध क्षेत्रले ठूलै फड्को मार्न सफल भयो। हालपनि जनसंख्या र भूगोलको अनुपातमा हाम्रो देशभन्दा निकै ठूलो राष्ट्रमा दुग्ध क्षेत्रको बिकासका लागि केन्द्र देखि गाउँस्तरसम्म एउटै मात्र राष्ट्रिय डेरी बिकास बोर्डले नेतृत्व प्रदान गरिरहेको छ। भारतमा राष्ट्रिय डेरी बिकास बोर्डको नेतृत्वमा किसानसँगको सहकार्यमा सहकारी मोडेलको विकास आत्मसाध गर्यो जसलाई हामिले Anand pattern को रूपमा चिन्छौ। राष्ट्रिय डेरी बिकास बोर्डको नेतृत्व र बिश्व बैक लगायत दाताको आर्थिक सहयोगमा भारतले सन् १९७० देखि १९९६ सम्म करिब साढे दुई दशक Operation Flood कार्यक्रम लागू गर्यो जसले किसानलाई दूध उत्पादन बढाउनमा प्रेरित गरी बित्तिय सहयोग प्रदान गर्दै व्यवसायिक व्यवस्थापन मार्फत गुणस्तरीय दुग्ध पदार्थ उत्पादनमा सहयोग पुऱ्यायो। फलस्वरूप भारत Milk Deficient देशबाट अमेरिकालाई पछी पार्दै विश्वकै ठूलो दूध उत्पादक देश बन्न पुऱ्यो। हाल भारत एकलैले बिश्वको कुल दूध उत्पादन क्षमताको २२.२९ प्रतिशत हिस्सा ओगटेको छ। त्यसको विपरित नेपाली दुग्ध क्षेत्र उल्टो दिशातर्फ लम्किरहेको जस्तो देखिन्छ।

नेपालमा पनि बि.सं २०३८ साल पौष २० गते दुग्ध विकास संस्थानको नेतृत्वमा विराटनगर दुग्ध वितरण आयोजना अन्तर्गत अभाही इकाहीमा पहिलो दुग्ध उत्पादक संस्थाको स्थापना भयो र त्यस लगतै टंकि सिनुवारीयमा दोस्रो र तत्पश्चात हेटौडा दुग्ध वितरण आयोजना अन्तर्गत संतपुरमा (रौतहट) दुग्ध संकलन केन्द्रलाई २०३८ साल फाल्युन १ गते बाट दुग्ध उत्पादक संस्थाको रूपमा परिणत गरी संचालन गरीयो। स्वर्य दुग्ध उत्पादक किसानको सहभागिता र स्वामित्वमा संचालन हुने भएकाले यसको लोकप्रियता हवातै बढन गई संस्थानका अन्य आयोजना मार्फत क्रमशः देशभरी दुग्ध उत्पादक संस्थाको विस्तार शुरु भयो। दुग्ध उत्पादक संस्थाको स्थापनापछी दूधको उत्पादकत्व अभिवृद्धी गर्नको लागि दुग्ध विकास संस्थानले किसानलाई अतिरिक्त आर्थिक सहायिता, पशु उपचार सेवा, नश्ल सुधारको निमित्त उन्नत जातको राँगो वितरण लगायत पशु उपचार तालिम प्रदान गर्ने काम तिब्रताका साथ अघि बढायो जस्ले गर्दा दूध उत्पादनमा वृद्धी भई दुग्ध क्षेत्रलाई गतिशिलता प्रदान गर्यो तर पछि २०४९ सालमा यिनै दुग्ध उत्पादक संस्था मिलेर गठन भएको केन्द्रिय दुग्ध उत्पादक सहकारी संघले यस सोचलाई सोचे अनुरूप निरन्तरता दिन सकेन। फलस्वरूप त्यसपछिका दशकमा दुग्ध क्षेत्रमा निजि डेरीको प्रवेशसँगै दुग्ध विकास संस्थानले पनि दुग्ध उत्पादक संस्था माथीको लगानीमा कमि गर्दै लायो। यसै बिचमा बि.सं २०४८ सालमा राष्ट्रिय दुग्ध बिकास बोर्डको गठन भयो तर विगतमा भएका सकारात्मक कामलाई निरन्तरता दिन नसकदा र कुनै नविनतम प्रयोग पनि गर्न नसकदा नेपालमा राष्ट्रिय दुग्ध बिकास बोर्ड स्थापना भएको ३ दशक नपुऱ्यै बोर्डको औचित्य माथी प्रश्न उठी, बोर्ड खारेजीको बहस हुन थालेको छ। यसको ठिक बिपरित देशको समग्र दुग्ध क्षेत्र भने चुनौतीको चाङ्ग बिच जटिल अवस्थामा उभएको छ।

अझैपनि हरेक बर्ष दोहोरीहने गुणस्तरको समस्या एकातर्फ छ भने, अर्कोतर्फ उपभोक्तमाख सचेतनाको कमिको कारणले गर्दा संगठित र औपचारीक रूपमा बितरण हुने प्रशोधित दूध र दुग्ध पदार्थको माग भन्दा दिनप्रति दिन अनौपचारीक ढांगबाट बितरण हुने अप्रशोधित दूध र दुग्ध पदार्थको माग बढिरहेको छ, जसले गर्दा देशभित्र ठूलो लगानीमा स्थापित उद्योगहरु धराशायी हुँदै गएका छन्। उद्योगीहरूले पनि गुणस्तर सुधारमा भन्दा नाफा धाटामा मात्रै आफूलाई केन्द्रित गर्दा उपभोक्ताले स्वदेशी उत्पादनको बिकल्प खोजिरहेका छन्। पहिले उपभोक्ताको रोजाईमा पर्न सफल सरकारको पूर्ण स्वामित्वमा संचालित दुग्ध विकास संस्थानले पनि हालका दिनमा गुणस्तर कायम गर्न नसकेको गुनासाहरु बढिरहेका छन्। यसको मुख्य कारण भनेको संस्थान भित्र हुने राजनीति, चुस्त व्यवस्थापनको कमी र संस्थानले आफूलाई समयानुकूल परिमार्जन र रूपान्तरण गर्न नसक्नु हुन्। हालकै अवस्थामा संस्थानको भविष्य त्यति उज्ज्वल देखिदैन। निजि क्षेत्रका उद्योगले सानो लगानीमा धेरै प्रतिफल खोज्ने र सधै धेरै प्रतिफल प्राप्त हुने क्षेत्रमा मात्रै लगानी गर्ने हुँदा निजि क्षेत्रले दुग्ध क्षेत्रले नयाँ सम्भावना खोज्न र नविनतम प्रयोग गर्न सकेको देखिदैन। निजि क्षेत्रमा स्थापित उद्योगले सधै आफूलाई दुग्ध विकास संस्थानको अनुयायीको रूपमा संस्थानको नकल गरिरहेका छन्, निजि डेरीमा भएका लगानी र तिनले गर्ने उत्पादन संस्थानको भन्दा भिन्न हुन सकेका छैनन्। यसकारण निजि क्षेत्रका उद्योगले नयाँ क्षेत्र पहिचान गर्न र बजारमा गुणस्तरीयताको मामलामा आफ्नो अलग पहिचान बनाउन सकिरहेका छैनन्। नेपाली उत्पादनले ग्राहकको माग सम्बोधन गर्न नसकेका कारण ग्राहकको रोजाईमा हालका बर्षमा बिदेशी उत्पादन पर्न थालेका छन्। जसले गर्दा बिदेशी उद्योग र लगानी नेपाली बजारमा भित्रिन चाहिरहेका छन्। नेपाली उद्योगले आफू र आफ्ना उत्पादनलाई प्रतिस्पर्धात्मक बनाउन पनि नखोज्नु र सधै यो क्षेत्रमा भित्रिन खोजेको विदेशी लगानीको विरोधमा उत्रिनु भनेको आफ्नो कमि कमजोरीलाई ढाकछोप गर्ने व्यवसायीक बेइमानी मात्रै हो। हाल्का

नेपालका अन्य धेरै क्षेत्रमा प्रत्यक्ष वैदेशीक लगानी भित्रिएका छन् । के त्यस्ता क्षेत्रमा नेपाली लगानीका उधोगले प्रतिस्पर्धा गरेका छैनन् त? के भित्रिएका सबै विदेशी लगानीका उधोगले नेपालमा सफलतानै हात पारेका छन् त? त्यसैले दुग्ध क्षेत्रको समग्र बिकासको लागि भएपनि शर्त सहितको प्रत्यक्ष वैदेशीक लगानी भित्रिन दिनु भनेको दुग्ध क्षेत्रको विकास लागी महत्वपूर्ण साबित हुनसक्छ ।

हाल नेपालको दुग्ध क्षेत्रको बिकासको लागी अंगालीएको निति हेर्दा निति मात्रै नभई समग्र निति निर्माण प्रक्रिया नै त्रुटिपूर्ण देखिन्छ । हालको अवस्थामा बिद्यमान निति र नियमबाट नेपाली दुग्ध क्षेत्रको आमुल परिवर्तन गर्न, यस क्षेत्रलाई गतिशिलता प्रदान गर्न र यस क्षेत्रको बिकास गर्ने सम्भावना ज्यादै न्यून छ । हाल यस क्षेत्रको बिकासको लागी बनेका ऐन, नियम हेर्दा यस्तो लाग्छ ती नियम यो क्षेत्रको बिकासको लागी नभई आफ्ना कार्यकर्ता पाल्न, बजेट बितरण गर्न, अयोग्य व्यक्ति छनोट गर्न र यस क्षेत्रमा राजनितिकरण गर्न मिल्ने गरी बनाइएका छन्, यस्तो लाग्छ मानौ यी नियमले नै योग्य मान्छेलाई निषेध गरी अयोग्य व्यक्ति स्थापित गर्न खोज्दै छन् । यसको ज्वलन्त उदाहरणको रूपमा बाम्पी प्रदेशले निर्माण गरेको प्रदेश दुग्ध बिकास बोर्ड ऐन - २०७५, त्यसमा भएको संशोधन र बोर्ड उपाध्यक्ष चयन र नियुक्ति गर्दा अपनाइएको समग्र प्रक्रियालाई लिन सकिन्छ र यसकै बिम्ब अन्य बोर्ड, संस्थान लगायत निकायको नियुक्ति प्रक्रियामा पनि प्रतिबिम्बित भएको पाइन्छ, जसले गर्दा समग्र दुग्ध क्षेत्रनै तहसनहस भएको छ ।

एकातर्फ प्रदेश, स्थानिय निकायले दुग्ध क्षेत्रको बिकास र बिस्तारमा लगानी गर्नको लागि अनुदान र सहयोग प्रदान गरीहेका छन् भने अर्कोतर्फ उचित सम्बन्ध र लक्ष्यको अभावमा भित्रिएको लगानिले सोचे अनुसार प्रतिफल दिन सकिरहेको छैन । यसको उदाहरणको रूपमा विगतमा भएमा लगानी, अहिले हुँदै गरेका र हाल प्रस्तावीत लगानीलाई लिन सकिन्छ । हालैका दिनमा प्रतिस्पर्धानै चलेको जस्तो गरी होरेक प्रदेशले विभिन्न संस्था मार्फत धूलो दूध कारखाना स्थापनामा जोडतोडका साथ लागिपरेका छन् तर समस्या के छ भने हाल देशमा भएका धूलो दूध कारखानाहरू पनि कच्चा दूधको अभावमा पूर्णक्षमतामा संचालन हुन सकिरहेका छैनन् । यस्तो अवस्थामा धूलो दूध कारखाना स्थापनामा गरिने लगानी बालुवामा पानि नहोस् भन्ने तर्फ सबैको ध्यान जान जरुरी छ । हालको अवस्थालाई बिश्लेषण गर्दा पूर्व एक नम्बर प्रदेशमा एउटा र पश्चिम लुम्बिनी र सुदूर पश्चिम प्रदेश मध्ये एक गरी जम्मा दुईवटा धूलो दूध कारखाना स्थापना गर्नु सही साबित हुनसक्छ तर लहडको भरमा देशभरी धूलो दूध कारखाना खोल्न अनुदान दिनभनेको लगानीको दुरुपयोग गर्नुमात्रै हो । हाल प्रदेश र स्थानीय निकायले मात्रै नभई विश्व बैकको सहयोगमा संचालित ठूलो बजेट सहितको NLSIP परियोजनाले पनि दुग्ध क्षेत्रका पूर्वाधार र संरचना निर्माणमा काम गर्न खोजिरहेको छ तर निवन्तम सोच र स्पष्ट लक्ष्यको कमिका कारणले गर्दा यस भन्दा पहिले संचालीत परियोजना जस्तै यो पनि वितरणमुखी परियोजना बन्ने लगभग निश्चित जस्तै छ ।

यदि नेपाल सरकारले दुग्ध क्षेत्रको बिकास र बिस्तार गर्ने नै हो भने गहन र तथ्यपरक बहस गर्न आवश्यक देखिन्छ । त्यसका लागी पहिले समग्र दुग्ध क्षेत्रलाई दूध उत्पादन, प्रशोधन र बजारीकरण गरी जम्मा तीन भागमा विभाजन गरी यस क्षेत्रका सम्बन्धित विज्ञहरूको सल्लाह सुभावमा हाम्रो परिवेश अनुसारको बिकासको मोडेल तय गर्नुपर्छ । त्यसको लागी सबै पक्ष बिच सृजनात्मक र सघन बहस हुनु आवश्यक देखिन्छ तब मात्रै समग्र दुग्ध क्षेत्रलाई देशको आर्थिक-सामाजिक रूपान्तरणसँग जोड्न सकिन्छ । हालका दिनमा दुग्ध क्षेत्रको बिकासको बहस गरिरहँदा प्रविधि र प्राविधिकको भूमिकालाई पूर्णरूपमा बेवास्ता गरी गर्ने गरिएको छ त्यसैले यस क्षेत्रमा हचुवाको भरमा गरीएका लगानीले सोचे अनुरूप प्रतिफल दिन सकिरहेको छैन । त्यसैले अबका दिनमा राष्ट्रिय दुग्ध बिकास बोर्ड लगायत अन्य निकाय र मन्त्रालय स्तरमा कार्यक्रम निर्माण र छनोट गर्नेदा सम्बन्धित क्षेत्रको बिज्ञको उपस्थितीलाई बढाउँदै लैजानूपर्छ जस्तै गर्दा यो क्षेत्र थप मजबूत र प्रतिस्पर्धी बन्न सक्दछ । दुग्ध क्षेत्रलाई प्रतिस्पर्धी र गुणस्तरीय बनाउँन राष्ट्रिय दुग्ध बिकास बोर्डले दिर्घकालिन योजना सहित निम्न बँदामा केन्द्रित भएर लाग्नसके यो क्षेत्रले छोटो समयमै देशको आर्थिक-सामाजिक रूपान्तरणमा टेवा पुऱ्याउन सक्नेछ ।

- १) गुणस्तरीय कच्चा दूधको उत्पादन वृद्धि
- २) पूर्वाधार विकास र संरचना निर्माण
- ३) गुणस्तर सुनिश्चितता सहितका प्रतिस्पर्धी उत्पादन
- ४) किसान र उपभोक्ता लक्षित सचेतना कार्यक्रम

यदि सरकारी संयन्त्रले दृढ भएर लाग्ने हो भने आगामी एक दशक भित्रै नेपालको दुग्ध क्षेत्रले आत्मनिर्भर बन्ने मात्र नभएर बिश्व बजारमा आफ्ना उत्पादन निर्यात गरेर आफ्नो उपस्थिती दृढीलो बनाउन र देशको अर्थतन्त्रमा ठूलो योगदान पुऱ्याउन सक्छ । अब फेरी पनि मन्त्रालय र विभागमा बसेर कर्मचारीको तहबाट योजना र कार्यक्रम निर्माण गरी अनुमान र हचुवाको भरमा प्रतिफलको आशा गर्नु भनेको बालुवा पिसेर तेल निकाल्नु जस्तै हो । त्यसैले यस क्षेत्रको सर्वाङ्गीन बिकासको लागी सरोकारवाला निकाय बिच गहन छलफल गरी भएका सबै सम्भावना केलाई, लगानीका क्षेत्र निर्धारण गरी औचित्य पुष्टि हुने लगानी गर्नसके यस क्षेत्रको बिस्तारमा कोशेदुङ्गो साबित हुने थियो ।

\* डेरी टेक्नोलोजिस्ट तथा सल्लाहकार सेवा प्रदायक

**"Milk Product Diversification" Training program in Province-2**

"Milk Product Diversification" training program was organized by National Dairy Development Board at Naktajij, Dhanusa from 2077/11/19 to 2077/11/23. Balak Chaudhary a Technical Director of NDDB and Damodar Dhakal a Project Manager of Janakpur Milk Supply Scheme were the resource person of the event where more than 20 participants from different small-scale dairy processors and milk collectors attended. The participants were from different districts of Province-2. Similarly, a training program was organized on "Clean Milk Production and Quality Improvement" by Kendriya Pashupanchi Palan Sahakari Sangh Limited with financial support from National



Dairy Development Board at Dhalkebar, Dhanusa from 2077/11/14 to 2077/11/18. The milk farmers, collectors from districts like Sindhuli, Udaypur, Siraha, Saptari, Dhanusa, Mahottari, Sarlahi were benefitted from the program. The five days training program was facilitated and instructed by Mr. Balak Chaudhary (NDDB) and Mr. Damodar Dhakal (JMSS). The training program covered the GMP in milk production, collection, and transportation.

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(Source: Damodar Dhakal, Project Manager, JMSS)



Manufactured by:  
Hetauda Dairy Industries Pvt. Ltd.  
Basamadi-1, Newarpani, Makwanpur, Nepal



“नेपाल डेरी साईंस एशोसियशनको ९ औं साधारणसभा तथा सम्मान समारोह सम्पन्न” पेज १ बाट क्रमशः.....



लागी शुभकामना व्यक्त गर्नुभएको थियो । ९औं साधारणसभाको उपलक्षमा नेपाल डेरी साईंस एशोसियशनले नेपालको दुध क्षेत्रमा अतुलनिय योगदान पुच्याउने ५ जाना बिशिष्ठ व्यक्तित्वहरूलाई सम्मान गरेको थियो । उहाँहरूलाई कार्यक्रमको प्रमुख अतिथि माननिय अनुराधा कोइरालाज्यूको हातबाट सम्मानपत्र प्रदान गरी सम्मान गरिएको थियो । सम्मानित हुने व्यक्तित्वहरूमा दुध विकास संस्थानका संस्थापक महाप्रबन्धकको हैसियतमा देशको समग्र दुध व्यवसाय र डेरी उधोगको बिकासमा सक्रिय भूमिका निर्वाह गर्नुभएकोमा एशोसियशनले स्व. राममिलन उपाध्यायज्यूलाई मरणोपरान्त सम्मानपत्र प्रदान गरी सम्मान गरिएको थियो भने, किसान बाट उत्पादन हुने दूध धैरे भएर नेपालमा दूध बिदाको समस्या बिकराल रहेको अवस्थामा नेपालमा निजि क्षेत्रको लगानीमा

देशकै ठूलो धूलो दूध उत्पादन कारखाना चितवन मिल्क स्थापना गरी मिल्क होलिडे रोक्न सहयोग गरी धूलो दूधको आयात प्रतिस्थापन गर्न र यस क्षेत्रलाई आत्मनिर्भर बन सहयोग पुच्याउनु भएकोमा स्व. लक्षण बाबु श्रेष्ठज्यूलाई मरणोपरान्त सम्मानपत्र प्रदान गरी सम्मान गरिएको थियो । त्यस्तै दुध विकास संस्थान अन्तर्गत दूध संकलनमा कृषकहरु स्वयंको स्वामित्व हुने गरी दूध संकलन गर्ने उद्देश्यले वि.सं २०३८ सालमा दुध उत्पादक संस्था शुरू गर्न नेतृत्व प्रदान गर्नु भएकोमा दुध विकास संस्थानका तात्कालिन कार्यकारी

अध्यक्ष श्री पर्लजंग राणा

**Effective 2075/05/16**

**(31 August 2019 AD)**

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P6. Krishna Aryal  
P7. Harish Prasad Bhatta



ज्यूलाई सम्मानपत्र प्रदान गरी सम्मान गरिएको थियो । त्यस्तै दुध विकास संस्थानको बिकास साथै निजि क्षेत्रमा दुध उधोग स्थापना गरी बहूमूल्य योगदान पुच्याउनु भएकोमा डा. हेरम्ब राजभण्डारी ज्यूलाई तथा खाध्य प्रविधि तथा दुध प्रविधि क्षेत्रको बिकासमा निरन्तर सक्रिय रही नेपालमै पहिलोपल्ट दुध प्रविधि क्षेत्रको दक्ष प्राविधिक जनशक्ति बिकास गर्नको लागि स्नातक तहमा दुध प्रविधि विकासको पठनपाठन हुने कलेज अफ एप्लाईड फूड एण्ड डेरी टेक्नोलोजी स्थापना गरी यस क्षेत्रको विकासमा अतुलनिय योगदान पुच्याउनु भएकोमा प्राध्यापक जगत बहादुर के.सी ज्यूलाई नेपाल डेरी साईंस एशोसियशनको मानार्थ सदस्यता प्रदान गरी सम्मान गरिएको थियो । सम्मान ग्रहणपछी आफ्नो धारणा राख्दै सम्मानित व्यक्तित्वहरु डा. हेरम्ब राजभण्डारी र प्राध्यापक जगत बहादुर के.सीले नेपाल डेरी साईंस एशोसियशनलाई सम्मानको लागी धन्यबाद ज्ञापन गर्नुभयो र एशोसियशनले गरेको सम्मानले आफूहरूलाई थप हौसला मिलेको बताउनुभयो । सम्मान कार्यक्रमपछी आफ्नो मन्तब्य राख्ने क्रममा कार्यक्रमको प्रमुख अतिथि माननिय अनुराधा कोइरालाज्यूले नेपालको दुध क्षेत्रको बिकासमा एशोसियशनले खेलेको भूमिकाको खुलेर प्रशंसा गर्नुभयो र आगामी दिनमा पनि यस्तै कार्यको अपेक्षा गर्नुभयो । एशोसियशनका तर्फबाट उपाध्यक्ष श्री राम तपेश्वर चौधरीले कार्यक्रममा उपस्थित सबैलाई धन्यबाद ज्ञापन गर्नुभएको थियो । पहिलो सत्रको समापनसँगै चिया नास्ता कार्यक्रम शुरू भएको थियो । चिया नास्ता कार्यक्रम लगतै अन्य अतिथिको बिराइसँगै कार्यक्रमको दोस्रो सत्र बन्दसत्र सुरु भएको थियो । साधारण सभाको दोस्रो सत्रको अध्यक्षता एशोसियशनका अध्यक्ष श्री टेक बहादुर थापाले गर्नुभएको थियो । त्सस सत्रमा एशोसियशनका सदस्यहरूमाझ छलफलको लागि एशोसियशनका महासचिव श्री गिरिधर बज्राचार्यले सांगठनिक र एशोसियशनका कोषाध्यक्ष श्री निरन्जन तिमिल्सेनाले आर्थिक प्रतिवेदन पेश गर्नुभएको थियो । एशोसियशनका महासचिव र कोषाध्यक्षले प्रस्तुत गर्नुभएको सांगठनिक र आर्थिक प्रतिवेदन साधारण सभाको सर्वसम्मतिले अनुमोदन गरेको थियो । अन्यमा एशोसियशनका अध्यक्ष श्री टेक बहादुर थापाले आफ्ना केही भनाई राख्दै कार्यक्रम समाप्तीको घोषणा गर्नुभयो । ♦ ♦ ♦

(स्रोत :- मिरिधर बज्राचार्य, महासचिव)