

Feed the Future Innovation Lab for Livestock Systems

Report on Train-The-Trainer
Dairy Food Basics: Fundamentals of Quality & Safety

February 6-10, 2017 in Nepal

The Management Entity at the University of Florida

Acknowledgement

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Sustainably intensifying smallholder livestock systems to improve human nutrition, health, and incomes

Disclaimer

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1. Introduction

The U.S. Agency for International Development (USAID) awarded the University of Florida (UF) Institute of Food and Agricultural Sciences (IFAS) funds to establish the Feed the Future Innovation Lab for Livestock Systems. This five-year initiative (October 2015 to September 2020) supports USAID's agricultural research and capacity building work under Feed the Future, the U.S. Government's global hunger and food security initiative. The International Livestock Research Institute (ILRI) is the UF/IFAS partner in implementation of the Livestock Systems Innovation Lab. The six target countries for this Lab are Burkina Faso and Niger in West Africa, Ethiopia and Rwanda in East Africa, and Nepal and Cambodia in Asia.

The Livestock Systems Innovation Lab aims to improve the nutrition, health and incomes of the poor by sustainably increasing livestock productivity and marketing, and consumption of animal-source foods (ASF). This aim will be achieved by introducing new location-appropriate technologies, by improving management practices, skills, knowledge, capacity and access to and quality of inputs across livestock value chains, and by supporting the development of a policy environment that fosters sustainable intensification and increased profitability of smallholder livestock systems.

The first phase of this activity took place in February 2017 and consisted of an assessment of various visits to farms, milk collection centers, milk chilling centers, processing centers, and discussions with various dairy sector stakeholders, to get a holistic view of the challenges and opportunities for training in the Nepal dairy sector. The team was composed of Dr. Albert De Vries, Professor, Department of Animal Sciences at the University of Florida, and Dr. and Dr. Kerry Kaylegian, Research and Extension Associate, Department of Food Science at The Pennsylvania State University. They worked together with a local dairy expert (Mr. Bholu Shankar Shrestha from Heifer International Nepal) who arranged all visits and accompanied the team throughout the entire period (February 6-10, 2017).

The team made a number of recommendations; however, some require a more longer term and/or significant investment that is beyond the scope of LSIL. Because of this, it was decided that a training-of-trainers course on Dairy Food Basics addressing quality and safety would be a significant step towards improved dairy safety and quality in Nepal. Dr. Kaylegian has an existing one-day workshop designed for small-scale dairy food processors that she has used for US and international audiences and can adapt for the Nepal training.

2. Purpose of the training course

The purpose of this course is to increase the trainer's knowledge in dairy food processing quality and safety concepts so they can improve the skills of employees in the Nepal dairy industry, resulting in higher quality and safer dairy foods.

3. Methodology

The Team

The training team was composed of Dr. Kaylegian and Ms. Lisa Caprera, graduate student, from The Pennsylvania State University. Ms. Kabita Devkota, a consultant with the University of Florida, translated the training materials and provided on-the-ground support and translation during the training sessions.

On-site organization of the course and selection of participants was done with the assistance of Mr. V. Padmakumar, International Livestock Research Institute and Asia Regional Coordinator for the Feed the Future Innovation Lab for Livestock Systems, Dr. Arniko Rajbhandary with the Nepal Dairy Pvt. Ltd. and President of the Nepal Dairy Industry Association, Dr. Laxman Sherchan and Dr. Herambha Raj Bhandari from Nepal Dairy, Bhola Shrestha at Heifer International Nepal, and Dr. Shiba Acharya at the Ministry of Agriculture and Livestock Development.

Training Course Description

The Dairy Food Basics: Fundamentals of Quality & Safety, A Training for Nepalese Dairy Processors is a two-day workshop, with lectures and activities focused in three main areas:

- *The basics of milk and dairy foods processing* begins with a discussion of the different definitions associated with the term “milk quality.” An overview of milk composition and microbiology provides the background to relate milk components and handling practices to markers of milk quality, and to the principles of cleaning and sanitizing a dairy processing plant. A session on dairy hazards addresses biological, chemical, and physical hazards that may be encountered during the manufacture of dairy products, and they should be considered in any risk assessment and food safety plan.
- Lectures on *good manufacturing practices (GMPs)* focus on personal hygiene as well as equipment, facilities, and operational practices.
- The section on *cleaning and sanitizing in a dairy processing plant* begins with key concepts in cleaning and sanitizing, such as soils and cleaning chemicals, and covers cleaning equipment, writing operating procedures, and keeping records.

Demonstrations and hands-on activities are included in the curriculum, and trainers are encouraged to modify and expand the examples and activities as appropriate.

Training course objectives:

The learning objectives for the course are:

- To recognize the different factors and best handling practices that contribute to high quality and safe dairy foods
- To identify the soils found in a dairy processing plant and be able to apply best practices for cleaning and sanitizing equipment, facilities, and personnel as appropriate
- To identify hazards in a dairy processing environmental and describe how to control them.

Most of the individual lectures have their own learning objectives.

Course schedule

See Annex 2 for the training course agenda. This annex contains a copy of the original agenda as included in the training manual and the actual agenda that was used in Chitwan and Kathmandu.

Target audience

Through discussion with representatives in Nepal and the Livestock Systems Innovation Lab, a course directed at managers in the dairy industry was deemed a better approach than providing training directly at the collection centers, as described in the report recommendations. Course participants were identified and invited with assistance from the Nepal dairy industry.

Training course dates and locations

The two-day course involved a lecture component conducted classroom-style in a conference center and practical session that was held in a milk processing plant. The course was conducted in Chitwan on August 23 and 24, 2018 at the Jungle Crown Hotel and Bijaya Dairy. The course was also conducted in Kathmandu on August 27 and 28, 2018 at the Yak Palace and Nepal Dairy.

4. Results

Course Location and Schedule Changes

- The course was designed to be held on-site at a dairy processing facility. The agenda is based on easy access to the facility to allow for a lecture to be given about a topic followed by a practical session in the processing facility to reinforce concepts and provide hands-on learning activities. The course is built in modules to allow flexibility around topics of interest, time allotment, and facility access.
- The dairy processors we worked with in Nepal could not accommodate the training on-site for this size group, and so the trainings were held in conference centers for the lecture portion, and then participants were bussed to the dairy for the practical sessions. The agendas used for the training in Chitwan and Kathmandu were modified to accommodate these changes. In Chitwan, we had access to the dairy processing facility on Day 2 only. For both Chitwan and Kathmandu, there was a minimum of 30 minutes travel time between the conference center and dairy that needed to be incorporated into the daily schedule.
- Following the training in Chitwan, we determined that traveling to the dairy processing facility on both days in Kathmandu would be too disruptive to the course flow, and so we used the Chitwan agenda for Kathmandu, with one practical session in the dairy on Day 2.

Audience

- The audience in Chitwan (19 people) and Kathmandu (24 people) consisted primarily of trainers from the dairy processing industry with technical backgrounds. Both sites had representatives from the dairy processing and dairy production associations in attendance.

- The participants were very engaged both days of training, asked good questions, and provided comments about their practices and facilities that contributed to group learning. The cross-section of representatives from production to processing greatly enhanced discussions and helped to promote the concept that dairy quality starts on the farm and that engagement between farmers and processors needs to improve in order to improve the quality of the whole Nepal dairy industry.

Course Materials and Content

- All participants were provided with a printed copy of the training manual and slides, and a USB drive with these documents :
 - English & Nepali translated
 - Training manual (Word)
 - Slides for 10 lectures (PowerPoint)
 - Key Concepts in Cleaning and Sanitizing, poster and flashcards
 - Writing Sanitation Standard Operating Procedures (SSOPs) handout
 - English version
 - 21 CFR 117 Current Good Manufacturing Practices, Hazard Analysis, Risk-Based Assessment, and Preventive Controls for Human Food
 - Pasteurized Milk Ordinance, 2015, US FDA
 - Control of *Listeria monocytogenes* Guidance for the U.S. Dairy Industry, 2015, Innovation Center for US Dairy
 - Best Practices for Cheese Makers, 2017, American Cheese Society
 - Penn State Extension, Food Safety Posters
- A training kit with helpful resources was introduced at the beginning of each training. A kit was left with our training hosts Bijaya Dairy and Nepal Dairy, and the kit used during the training was left with Ms. Kabita Devkota in Kathmandu, in the hopes that any trainer will be able to borrow the materials as needed. Each kit included :
 - Flipchart post-it notes and markers
 - Soap, paper towel, and a Glo Germ kit for hand washing and equipment washing demonstrations
 - Clipboard and pen for GMP inspections
 - Flashlight for GMP inspection
 - Key Concepts in Cleaning and Sanitizing, poster and flashcards (Penn State, printed on water resistant paper)
 - Food safety posters (Penn State, laminated)
 - Dairy quality and sanitation guidelines (Dairy Practices Council)
 - Extra batteries for the flashlights
 - Complimentary copy of the Tetra Pak Dairy Processing Handbook (in Ms. Devkota's kit only)

- The training began with an overview of the course, a discussion on how to customize the course modules for specific audiences, and some tips for giving the course, such as:
 - Addition of their own pictures and stories as appropriate, and
 - The use of flipcharts to illustrate concepts and create a parking lot of questions, or points for later discussion.
- Tips for the trainers in delivering the curriculum were provided throughout the course as appropriate :
 - In the first module, we covered the basics of milk and dairy food processing and highlighted the influence of raw milk quality and handling on the quality of finished dairy foods. Understanding milk composition (chemistry) and microbiology explained the properties that contribute to good quality dairy foods and the mechanisms underlying milk deterioration. To set the foundation for food safety plans and good behavior, biological, chemical, and physical hazards in dairy processing plants were identified and techniques to manage them were discussed.
 - The second module on good manufacturing practices (GMPs) covered personal hygiene practices, sanitary operation practices in the processing plant, and best practices for equipment, utensils, and facilities. GMPs concepts were reinforced with a handwashing activity done in the classroom and a practical session in the dairy processing plant.
 - The third module covered key concepts in cleaning and sanitizing, and writing sanitation procedures. Class activities to support these concepts included a milk can washing demonstration in the dairy plant and group development of a sanitation procedure in the classroom, but they were removed from the schedule due to venue changes and time constraints from the original agenda. This change in schedule provided a discussion point on how to be flexible with the schedule and activities as needed in the field.
- The lecture slides were shown simultaneously in English and Nepali in Chitwan. People seemed to follow the English slides most of the time. In Kathmandu, we only had access to one projector, and we were only able to show the English slides. All attendees followed the English slides with no problems. Some questions during lectures needed clarification between English and Nepali, and Kabita translated for us.
- The lecture material was well-received and participants were able to make the connections between the delicate nature of milk, factors affecting quality, and best practices throughout farm to processor to consumer.
- There were four activities planned for this curriculum :
 - Day 1. Handwashing Demonstration, with Glo Germ to support the Good Manufacturing Practices (GMPs) – Personnel lecture. This was conducted in the classroom and used the conference center restroom. We gave three people different instructions on how long to wash and whether to use soap, towels, or nothing. We provided soap and single-use disposable paper towels to ensure the demonstration

could be conducted properly. The demonstration provided a visual illustration for all students of the importance of properly washing hands to avoid contamination in the processing plant.

- The restroom facilities at the Jungle Crown Hotel in Chitwan were new, clean, and had clean soap and a multi-use towel. The restroom facilities at the Yak Palace were not particularly clean, sometimes had soap, and did not have any type of towels. This was used as a point of discussion in the course on trying to change handwashing behaviors in a country that does not routinely follow these sanitary practices.
- Day 1. Good Manufacturing Practices (GMPs) Inspection, in dairy processing plant. This was a guided inspection to see what issues we discussed in the lectures that we could see in the plant. The activity worked reasonably well at both dairy processing plants. A systematic tour was given through the facility, from receiving through production, and good and bad practices were pointed out by the instructors. Some issues with this approach are:
 - The group size was large and it was hard to hear what was being said.
 - Many people preferred to look at the facility on their own and drifted away from the main group, thus losing the instructional aspect of this activity.
 - The representatives from the dairies we toured were very attentive during the inspection and received suggestions on how to make changes that will improve their operation.
 - This is an excellent activity, and having a new set of eyes inspect a facility is very valuable. This activity should be incorporated into as many trainings as possible, but with a smaller group.
- Day 2. Cleaning Equipment, demonstration with Glo Germ in the dairy processing plant. The intention of this activity was to do a demonstration similar to the handwashing demonstration, but on a milk can or small vat in the processing plant. However, due to changes from the original agenda, this activity was removed from current training. We did have a group discussion in the processing plant as to how the trainers may conduct this activity for processors and farmers.
- Day 2. Writing Sanitation Standard Operating Procedures (SSOPs). This was scheduled to be a group activity of writing an operating procedure in the classroom. Due to time constraints, and not enough information about any particular dairy and their cleaning protocols that we could have used as a starting point, this activity was removed from the curriculum. Instead of creating our own SSOPs, we reviewed, in detail, an existing SSOP from Penn State for their pilot plant HTST pasteurizer and highlighted key elements of writing procedures and keeping records.
- An additional training manual was provided to the participants in the Kathmandu session, directly from the Nepal Dairy Industry Association. The Junior Dairy Technician Hand Book is in Nepali, and although I cannot read the text, a review of the pictures and tables indicates that this is an excellent resource for Nepal dairy processors, and it supports the

materials we presented in these training sessions. This was the first time I was aware of this resource.

- A formal course assessment, using pre- and post-training surveys, was not conducted because of the short timeline needed to complete the training and some confusion about approving this work through the IRB at Florida or Penn State universities, which have very different approval procedures. For the Kathmandu training, we collected a post-workshop evaluation using the standard Food Science Department Short Course Evaluation Form. Twenty-three persons completed the evaluation and the feedback was overwhelmingly positive. The details of the evaluation are included in the appendix.

Impact

- Impact - Chitwan: At the end of the Chitwan training, Mr. Hem Prasad Tiwari thanked me and said, “We learned more than we expected to.” Hem’s kind comment confirmed to me that the subject matter was on target and I accomplished what we set out to achieve with this training.
- Impact – Kathmandu: Dr. Arniko Rajbhandary from Nepal Dairy and the Dairy Industry Association provided the closing comments to the training at Nepal Dairy. I was told that the trainers had not seen information on writing standard operating (SOP) and sanitation procedures (SSOPs) before and how useful this will be. Each of the trainers was assigned a topic on which to begin writing an SOP/SSOP, and that there would be a meeting in two days to review everyone’s progress. This was the first time in more than 20 years of training that I have seen a group of people accept and incorporate new concepts immediately after a training session. The speed at which they are moving forward to develop standardized procedures was further evidence to me that we achieved our goals for the Dairy Basics curriculum.

5. Recommendations

- A follow up with the trainers should be conducted in the next six to twelve months to see how many trainings have been held and the audience, to determine if changes to the current materials are needed, and to incorporate newly developed resources (e.g., SSOPs, pictures) into the training curriculum.
- I recommend that future trainings be coordinated with Nepal Dairy Industry Association. They are already leading many training efforts and are familiar with the trainers and local dairy food processors and resources.
- The Junior Dairy Technician Hand Book should be translated into English before further development of materials is pursued to know what has already been done and to get an accurate assessment of information gaps.

- This training manual was written in conjunction with the Nepal Food Scientists and Technologists Association, which may be an additional resource for training and developing food safety materials (www.nefosta.org.np).
- The course was designed to be taught in a dairy processing plant with an area for a classroom setting (e.g., break room) to allow for easy transition between learning about concepts, practicing them, and then reviewing them in a quiet, classroom setting. Future trainings should be conducted on-site when possible, but the flexible nature of the course material can accommodate many different venue scenarios. As trainings get scheduled, I recommend that the trainer works closely with the venues in advance to clarify available resources and incorporates reasonable timing into the agenda for breaks, meals, transfer between facilities, and time needed at facilities for getting suited in protective gear, conducting activities, reviewing activities, and meeting with facility representatives.
- The recommendation from the initial needs assessment is still of huge importance in improving the quality of dairy foods in Nepal:
 - Milking hygiene, mastitis, and somatic cell count (SCC) should remain a focus of any program to improve the Nepal dairy industry.
 - There is currently no data on average SCC and bacterial counts, or transport temperatures in Nepal, and their impact on raw milk quality as it arrives at the dairy processing facility
 - Implement simple milk quality measurement systems at various milk collection centers. Measure bacteria, somatic cell count, or other measures of quality that affect shelf life (example technology used in Rwanda projects by LSIL). Implement competitions within milk collection centers for milk quality, with rewards that are non-financial (blue ribbons, awards, rankings, photos in newspaper [behavioral economics]) and eventually financial (zero-sum penalty/price structure within the milk collection center). Have Agriculture and Forestry University (AFU) or Himalayan College of Agricultural Sciences and Technology (HICAST) students and faculty monitor the implementation. Document the level of milk quality over time and the impact of training or a bonus system. Survey winning farms to learn about their management practices.

6. Next steps

- Conduct the six to twelve month follow up with the trainers and modify training materials as needed.
- Collaborate with the Nepal Dairy Industry Association on plans for future training sessions.
- Translate the Junior Dairy Technician Hand Book into English.
- Initiate a program to quantify raw milk quality indicators such as SCC, and implement a quality measurement program with the farmers.

Annex 1 - List of participants

Chitwan, August 23 and 24, 2018

S.N.	Name	Organization
1	Shiba Prakash Acharya	Ministry of Agriculture and Livestock Development
2	Hem Prasad Tiwari	Chitwan Milk Limited
3	Santosh Ghimire	Chitwan Milk Limited
4	Krishna Prasad Bastola	Pawan Dairy Udhyog(Vijay Dairy)
5	Shiva Prasad Bastola	Pawan Dairy Udhyog
6	Nabaraj Gajurel	Koseli Dairy ,Sindhuli
7	Buddhiram Acharya	National Cattle Research Farm, Rampur
8	Chakra Ghalan	National Cattle Research Farm, Rampur
9	Dipesh Khatiwada	Jeevan Bikas Dairy Product
10	Shyam K. Mishra	NMC Dairy, Jhapa
11	Karun Pokhrel	Annapurna Dairy, Chitwan
12	Bijaya Lamichhane	Fishtail pvt. Ltd., Pokhara
13	Deependra Thakur	Kamdhenu Dairy Development Cooperative Limited
14	Keshab Raj Sapkota	Hetauda Dairy Industry
15	Narendra Dangol	Sujal Dairy Pvt. Ltd.
16	Ashok Thapa	Milan Dairy Pvt. Ltd.
17	Sonam Lama	ANMC Dairy
18	Tika Raj Kadariya	Livestock Farm, Pokhara



Chitwan class photo



Handwashing demo with Glo Germ

Kathmandu, August 27 and 28, 2018

S.N	Name	Organization
1	Dr. Laxman Sherchan	Nepal Dairy
2	Ujjwal Bhandari	Nepal Dairy
3	Ajana Prajapati	Nepal Dairy
4	Neekesh Sainju	Shivam Dairy
5	Bishow Raj Basnet	Aadhunik Dairy Product Pvt. LTd
6	Bhoj Raj Pokhrel	Nepal Agriculture and Research Council
7	Saroj Sapkota	Nepal Agriculture and Research Council
8	Vijay Prasad Chopudhary	Himalaya Dairy
9	Rajendra Gopal Shrestha	Dairy Industry Association
10	Umesh Poudyal	Anamol Dairy
11	Namuna Khatiwada	Rajdhani Dairy pvt. Ltd
12	Suju K.C.	Kathmandu Dairy Pvt. Ltd
13	Aaisha Khaitu	Sanjeevani Dairy Udhdyog
14	Sanita Thapa	Samyukta Dairy
15	Dr. Arniko Raj Bhandari	Nepal Dairy Pvt. Ltd
16	Krishna Prasad Bastola	Dairy Industry Association
17	Manjeet Shrestha	Dairy Industry Association
18	Prabhat Dangol	Country Foods Pvt. Ltd.
19	Dipu Dangol	Nepal Dairy Pvt. Ltd
20	Hasna Maiya Shrestha	National Dairy Development Board
21	Karishma Pradhan	Modern Dairy Pvt. Ltd
22	Aashika Subedi	Nawaprabhat Dairy Pvt. Ltd
23	Sujan Sainju	Sainju Dairy Pvt. Ltd.
24	Dr. Herambha Raj Bhandari	Nepal Dairy Pvt. Ltd



Kathmandu class photo



Lisa Caprera and Dr. Kerry Kaylegian

Annex 2 - Training course agenda

ORIGINAL AGENDA

Dairy Food Basics: Fundamentals of Quality & Safety A Training for Nepalese Dairy Processors

Day 1

08:15 – 09:00	Course Overview and Introductions
09:00 – 09:30	Adapting the Curriculum to Different Audiences & Locations in Nepal
<i>The Basics of Milk and Dairy Foods Processing</i>	
09:30 – 09:45	Introduction to Milk Quality and Safety
09:45 – 10:15	Break
10:15 – 11:45	What is Milk? (Chemistry & Microbiology)
11:45 – 12:45	Lunch
12:45 – 13:45	Hazards in Processing Dairy Foods
<i>Good Manufacturing Practices (GMPs)</i>	
13:45 – 14:45	Good Manufacturing Practices (GMPs) – Personnel
14:45 – 15:15	Break
15:15 – 5:45	Good Manufacturing Practices (GMPs) – Equipment, Facilities, Operations
15:45 – 16:30	GMPs Practical Session in the Processing Plant
16:30 – 16:45	Day 1 Review, Q & A

Day 2

<i>Cleaning and Sanitizing in a Dairy Processing Plant</i>	
08:30 – 09:30	Key Concepts in Cleaning and Sanitizing
09:30 – 10:00	Cleaning Equipment
10:00 – 10:30	Break
10:30 – 11:45	Cleaning Equipment Practical Session in Processing Plant
11:45 – 12:45	Lunch
12:45 – 14:15	Writing Standard Operating Procedures (SSOPs)
14:15 – 14:45	Record Keeping Procedures
14:45 – 15:15	Break
15:15 – 15:45	Course Summary, Q & A
15:45 – 16:15	Delivering the Curriculum to Different Audiences & Locations

REVISED AGENDA
Dairy Food Basics: Fundamentals of Quality & Safety
A Training for Nepalese Dairy Processors

Day 1

09:00 – 09:45	Welcome from Nepal Dairy Industry Officials
09:45 – 10:30	Course Overview and Introductions
10:30 – 10:45	Adapting the Curriculum to Different Audiences & Locations in Nepal
10:45 – 11:15	Break
<i>The Basics of Milk and Dairy Foods Processing</i>	
11:15 – 11:30	Introduction to Milk Quality and Safety
11:30 – 13:00	What is Milk? (Chemistry & Microbiology)
13:00 – 14:00	Lunch
14:00 – 15:00	Hazards in Processing Dairy Foods
15:00 – 15:30	Break
<i>Good Manufacturing Practices (GMPs)</i>	
15:30 – 16:15	Good Manufacturing Practices (GMPs) – Personnel
16:15 – 16:45	Good Manufacturing Practices (GMPs) – Equipment, Facilities, Operations
16:45 – 17:00	Day 1 Review, Q & A

Day 2

<i>Cleaning and Sanitizing in a Dairy Processing Plant</i>	
9:00 – 09:45	Key Concepts in Cleaning and Sanitizing
09:45 – 10:00	Cleaning Equipment
10:00 – 10:30	Break
10:30 – 11:30	Writing Standard Operating Procedures (SSOPs)
11:30 – 12:00	Record Keeping Procedures
12:00 – 13:00	Lunch
13:00 – 13:30	Transfer to Dairy
<i>Good Manufacturing Practices (GMPs)</i>	
13:30 – 15:45	GMPs Practical Session in the Processing Plant
15:45 – 16:15	Course Summary, Delivering the Curriculum to Different Audiences & Locations, Q & A

Annex 3 - Kathmandu course evaluation

Training name: Dairy Food Basics Training

Dates: 27- 28th August 2018

Number of participants: 23

Number of persons that completed the evaluation: 23

	Low						High
Part A & B	1	2	3	4	5	6	7
Overall quality of the course	0	0	1	5	3	10	4
Overall quality of the instructor	0	0	0	1	6	4	13
The extent to which participation in this program has increased	0	0	0	2	3	12	6
Understanding of the importance of subject matter	0	0	1	0	4	7	11
Ability to solve problems	0	0	0	0	4	14	5
How likely you are to use the material you have learned within the next 6 months	0	0	0	0	0	5	18

Part C				
What new information did you learn from this class on the following topics:	Nothing new	Some new knowledge	Moderate amount	A great deal
1. Introduction to milk quality	0	6	15	2
2. What is milk	0	10	12	1
3. Hazard in processing dairy foods	0	11	12	0
4. GMPs - Personnel	0	4	1	18
5. GMPs - Equipment, Facilities, Operations	0	5	2	16
6. Key concepts in cleaning and sanitizing	0	9	12	2
7. Cleaning equipment	0	7	13	3
8. Writing SOP	0	14	8	1
9. Record keeping procedures	0	12	8	3
10. Practical session at dairy - GMP review	0	2	8	13

Strengths of the training

- Providing soft copies of the training materials
- Providing frequent refreshing and lunch at time
- Providing excellent lecture with the examples
- Practical based course curriculum
- Experienced subject matter specialist

- Good presentation
- Discussing each and every small points in brief

Weaknesses of the course

- Practical training is not provided .i.e. no learning doing for cleaning
- Practical session must be in a small group
- There should be more interaction program and group discussion

Recommendations for improving the course

- This types of training should be provided regularly in all types of dairies of Nepal
- Should deal with product manufacturing processes for the best product
- More training on new technologies in dairy
- Training days should be extended



FEED^{THE}**FUTURE**

The U.S. Government's Global Hunger & Food Security Initiative

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