



RESEARCH
PROGRAM ON
Livestock



Scaling Sheep Fattening in the Ethiopian Highlands Feeds and Nutrition Workshop for Youth Groups

Addis Ababa, Ethiopia
December 20-21, 2019



Introduction

ICARDA is scaling improved sheep fattening practices in the Ethiopia by targeting youth as disseminators of improved sheep fattening technologies and practices, and facilitators of participatory learning. The review workshop held in August 2019 with key stakeholders of the project to review the progress of the sheep fattening project, outlined feed resource identification, processing and optimal utilization as a key constraint to youth groups going forward. As follow-up to this concern, youth group leaders from all the 44 groups formed in 2018 with their corresponding enumerators and NARS researchers were invited to Addis to discuss various issues around feed resources availability, seasonality, quality and utilization and its implications on improved sheep fattening performance. Participants visited the ILRI Nutrition Lab on the ILRI Campus to understand processes involved in determining feed quality. Participants of the workshop are listed in Annex 2.

All sessions during the two-day workshop were highly participatory, with technical presentations guiding the discussions.

Participant expectations

The introductory session sought to determine the expectations that participants had for the workshop. These included:

- To share experiences on feeding and fattening between sites
- Least-cost feeding for sheep fattening
- Feed formulation utilizing locally available feedstuffs
- Feed resource optimization

After a presentation on the overview and progress of the project by Jane Wamatu, the NARS researchers presented introductory presentations on traditional versus improved sheep fattening practices, as summarized below.

Traditional Sheep Fattening System	Improved Sheep Fattening System
In this system, feeds with low quality and quantity are used because the feeding system is dependent on grazing and crop residue supplementation that can only satisfy the maintenance requirement. Fattening rams receive unclean water and housed in general livestock sheds/or together with people. Poor hygiene and ventilation systems, and poor health management have negative effects on growth rate. Vaccination and deworming before fattening is not practiced and diseased rams are sometimes treated traditionally.	In this system, balanced diets that fulfill the growth requirement are provided. Fattening rams receive clean water and feed on troughs and sheep are fattened for 3 months. Rams are dewormed and vaccinated prior to fattening. They are separately housed in dry and hygienic shelters.



Such systems are characterized as subsistence oriented because fattening is undertaken over long periods (>6months) and the system has poor marketing systems and linkage.

Categorization of feed resources and utilization options

Representatives from each youth group shared their knowledge and utilization of feed resources in their sites.



Fig 1: Plenary sessions on feed resource availability and feeding options

Doyogena: Enset roots and leaves feeding are the main feeds. Participants indicated that enset is a multipurpose crop of which every part is thoroughly used for food, feed, medicinal, construction and ornamental purposes. Throughout the growth stage of enset, it is used for various purposes. Other feeds included fresh cut grass like desho, small unsaleable potatoes and leaves (during the potato production season); household food scraps and residues (such as residue from brewed coffee, *Kocho*); agro-industrial by products like wheat bran.

NARS researchers noted that enset is a full purpose crop that needs further investigation as local knowledge from participants revealed that farmers use enset varieties selectively to feed different livestock. Other revelations were that enset when mixed with wheat bran, can be lethal. Indeed, interesting research questions.

Menz: Major feed resources mentioned for fattening included crop residues such as straws from barley, lentil, faba bean, vetch and wheat, left-overs from local brewery *atela*), broken lentil, agro-industrial by products like wheat bran and noug Cake. Participants indicated that straws mixed with atela, noug cake or wheat bran are the major feeds fed to rams.

Bonga: Rams are predominantly grazed on grass pasture, fresh cut grass like Desho and leaves from *Mogne Abeba* (foolish-Flower). Participants explained that they had recently learned from the NARS to boil leaves from foolish flower and add salt to it before feeding.

Thereafter lengthy discussions ensued on:

- Feed preparation and formulation practices
- Feeding methods and practice
- Feed conservation practices for dry season.

Action

The participants were well conversant with available local feed resources, therefore, ICARDA and NARS to concentrate more on ration formulation.

Challenges, constraints and opportunities in feeds and feeding

Participants formed working groups to discuss challenges, constraints. Possible solutions and opportunities were thereafter discussed in plenary, with a lot of cross-fertilization.

Issues raised included:

Menz: Water shortage due to short rainy season, high cost price and low accessibility to agro-industrial by products (wheat bran and noug cake), limited access to improved forage varieties, late collection of crop residues, extreme frost conditions before seeding stage of forages, lack of frost tolerant varieties leads to high dependence on forage seed due to frost before seeding stage

Doyogena: Water shortage, shortage of land for both crop and feed production, limited availability of crop residues, high cost of agro-industrial by products.

Bonga: Negative perception on the utilization of crop residues/straws (mostly of it is burnt), feeds with high moisture content (resulting in reduced intake), enset is abundant in the area but not utilized as feed.

General issues raised that will be followed up in subsequent trainings included:

- Lack of awareness on categorizing locally available feeds as concentrates or roughage, energy or protein sources
- Lack of information on nutrient composition and least cost ration formulation
- Lack of knowledge on treatment of crop residues treatment



Fig 2: Group work on challenges and opportunities

Topics of discussion on Day 2 centered on:

- Nutrient composition of feed and its importance
- Feed formulation and nutrient quality
- Nutrient requirements of rams

Feed Quality

As indicated by participants, feeding of unbalanced rations to fattening rams was a common practice and it was mainly due to the knowledge gap on feed quality. Knowledge of the quality of a feed helps determine the type and quantity of feedstuff to be included in a diet. After a brief presentation on the major components of a feed, participants visited a nutrition laboratory at ILRI campus.

In the Lab, participants were able to understand that feeds are as good as the nutrients they contain. They contain different amounts of water, ash, protein, fiber, minerals and the amounts of these nutrients in the feed can only be determined in a nutrition Lab. The Lab visit also explained the various analysis processes used to determine quantities of different nutrients.

Participant Feedback from the workshop

- Participants realized that feed resources of various types are available in their localities. They have a responsibility to seek information and knowledge on the existing available feed resources that are suitable for sheep fattening.
- Feed resources are utilized differently in different regions; therefore, the workshop was useful in learning about various utilization options for sheep feeding e.g Sweet potato is produced in Menz but not used as feed as it is in Doyogena; crop residues are available but not utilized as feed in Bonga but they are main feed resources in Menz; Enset is widely used as animal feed in Doyogena, but hardly used in Bonga although it is widely available.
- They were convinced that locally available feedstuffs in their region have nutritive value high enough to sustain high fattening performance. Majority only believed high quality nutrients are in concentrates.
- Feed offered to livestock varies with their weight.
- The Lab visit was extremely useful in understanding the importance of nutrient content of feedstuffs.
- Appreciated the importance of recording data like cost of feed and weight of animals.



Fig. 3: Visit to ILRI nutrition Lab.

Major opportunities

Profitability of sheep fattening business, suitable agroecology to forage species in Bonga and Doyogena, Willingness of youth to face the challenges, openness of youths to receive research outputs and training and experience sharing between and within youth groups.

Way forward

- Peer learning – youth groups to visit each other
- Enumerators and development agents need continuous ToT training on feeds and feeding systems as they are the immediate contact of youth group members and farmers in their communities. It was surprising that their knowledge on feed resource utilization is very low.

Annexes

Annex 1: Workshop Agenda

Training Workshop on Feeds, Feeding & Nutrition for Improved Sheep Fattening Practices and Technologies in Ethiopia

December 20-21, 2019

**Venue: ILRI Campus and Beshale Hotel
Addis Ababa**

Day 1: Friday, December 20		
Time	Activity	Facilitator
8:30 am	Registration	Martha Sintayehu
9:00 am	Welcoming Remark	Jane Wamatu
9:10 am	Project Review	Jane Wamatu/Nahom Ephrem
9.30 am	What are the Currently used Traditional Practices in Sheep Fattening & Why are Improved Practices Important?	NARS Researchers - Menz
10.00am		NARS Researchers - Bonga
10.30am		NARS Researchers - Bonga
11:00 am	Tea Break	
11:30 am	Group Photo Session	
11:45 am	Feed Resources Availability and Seasonality	Jane Wamatu/Nahom
12.30	Discussions	NARS Researchers – Bonga, Menz, Doyogena
1:00 pm	Lunch	
2:15 pm	Feed Resource Quality - Overview	Jane Wamatu/Nahom
	Feed quality – NARS Presentations	NARS Researchers – Bonga, Menz, Doyogena
3.15 pm	Tea Break	
3.30 pm	Visit to the ILRI Nutrition Laboratory	Jane Wamatu
4.30 pm	Wrap up	Jane W.



Training Workshop on Feeds, Feeding & Nutrition for Improved Sheep Fattening Practices and Technologies in Ethiopia

December 20-21, 2019
Venue: ILRI Campus and Beshale Hotel
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Day 2: Saturday, December 21		
Time	Activity	Facilitator
8:30 am	Registration	Martha Sintayehu
9:00 am	Reviews from Day 1	Jane Wamatu
9:10 am	Feeds Formulation & Balancing	Jane Wamatu/Nahom Ephrem
10.00 am	Challenges, Constraints, Opportunities of Feeds & Feeding	Menz
10.45	Challenges, Constraints, Opportunities of Feeds & Feeding	Bonga
11:30 am	Tea Break	
11:45 am	Challenges, Constraints, Opportunities of Feeds & Feeding	Doyogena
1:00 pm	Lunch	
2:00 pm	Way Forward: Opportunities in Feeds & Feeding	Group Discussion
3.15 pm	Tea Break	
3.30 pm	Wrap up	Jane Wamatu/Nahom Ephrem



Annex 2: Workshop Participants

#	Name of Participant	Project Site	Youth Group	Position
1	Yeshareg Tesfa	Menz Gera	Boda	Youth leader
2	Belege Yitna	Menz Gera	Tsehaysina	Youth leader
3	Asmarech Dems	Menz Gera	Sinamba	Youth leader
4	Zewge Atlaw	Menz mama	Zole	Youth leader
5	Zeneb Tekleyohans	Menz mama	Key-Afer	Youth leader
6	Assefa G/hana	Menz mama	Millennium SF and Marketing	Youth leader
7	Aynalem Gebrie	Menz Gera	Tebab	Youth leader
8	Kelemu Mekonnen	Menz Gera	Merchet	Youth leader
9	Shenkutie Dejene	Menz Gera	Ayzorba	Youth leader
10	Habtamu Guchale	Menz mama	Key-Afer	Enumerator
11	Beself Tadesse	Menz mama	Zole	Enumerator
12	Lakew Mamo	Menz mama	Millennium SF and Marketing	Enumerator
13	Bazewew hailu	Menz Gera	Tsehaysina	Enumerator
14	Dinku Aschenaki	Menz Gera	Sinamba	Enumerator
15	Birye debebe	Menz Gera	Boda	Enumerator
16	Aschenaki Gebrsh	Menz Gera	Merchet	Enumerator
17	Genzeb Beletew	Menz Gera	Tebab	Enumerator
18	Kochew Beletew	Menz Gera	Ayzorba	Enumerator
19	Ayele Abebe	DBARC ¹		Researcher
20	Asfaw Bisrat	DBARC		Researcher
21	Tesfa Getachew	DBARC		Researcher
22	Ashebir Alemnayehu	Bonga	Alarigexa-Kera	Youth leader
23	Fikire Kochito	Bonga	Modiyo	Youth leader
24	Ashagire Imamo	Bonga	Yema-Buba	Youth leader
25	Almaz Dego	Bonga	Shaya Sheep	Youth leader
26	Shicho Shiwano	Bonga	Shuta-Chifera	Youth leader
27	Birhanu Bichito	Bonga	Meduxa-Gurta	Youth leader
28	Kifle Tekle	Bonga	Shena	Youth leader
29	Atirse Arote	Bonga	Meduxa-Gurta	Enumerator
30	Belay Taqo	Bonga	Shena	Enumerator
31	Birhanu Tamene	Bonga	Shaya	Enumerator
32	Niguse Geremew	Bonga	Shuta-Chifera	Enumerator

33	Atirse Haileyesus	Bonga	Alarigexa-Kera	Enumerator
34	Fikire Desalegn	Bonga	Modiyo	Enumerator
35	Alimaz Abuye	Bonga	Yema-Buba	Enumerator
36	Muluken Zeleke	BARC ²		Researcher
37	Zelalem Abate	BARC		Researcher
38	Birhanu Lafebo	Doyogena	Serara	Youth leader
39	Selamawit Shamebo	Doyogena	Serara	Youth leader
40	Tefera Shamebo	Doyogena	Anicha	Youth leader
41	Abera Adore	Doyogena	Hawora	Youth leader
42	Ermias Alemu	Doyogena	Begedamu	Youth leader
43	Meseret Birhane	Doyogena	Murasa	Youth leader
44	Bekele Shamebo	Doyogena	Serara-A	Enumerator
45	Micael Desalegn	Doyogena	Serara-B	Enumerator
46	Birhanu petros	Doyogena	Anicha	Enumerator
47	Mekides Tafesse	Doyogena	Hawora	Enumerator
48	Mesfin Megebo	Doyogena	Begedamu	Enumerator
49	Genet W/mariam	Doyogena	Murasa	Enumerator
50	Tesfaye Abiso	Areka ARC		Researcher
51	Estifanos Endrias	Areka ARC		Researcher

DBARC¹: Debre Birhan Agricultural Research Center; BARC²: Bonga ARC



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