

Feed and fodder production in different agroclimatic zones and their utilization for livestock in Odisha

Dissemination of new feed technology and forage crops

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Introduction

Odisha constitutes 6.09% of the total Indian livestock population. About 85% of rural Odisha rear livestock, which is believed to be the only means of sustaining their livelihood (small and marginal farmers draw 30% of their annual income). However, this sector is confronted with different problems such as low productivity, high cost of commercial feed, less availability of quality green fodder and lack of access to improved feeding technologies.

With a mission to improve livestock productivity through better feeding management and enhancing availability of quality feed, the memorandum of understanding between the Fisheries and Animal Resources Development Department of the Government of Odisha and the International Livestock Research Institute (ILRI) was done in the presence of the Chief Minister of Odisha on 15 April 2017 to implement the three year project “feed and fodder production in different agroclimatic zones and utilizations for livestock of Odisha” in collaboration with Directorate of Animal Husbandry & Veterinary Services, Odisha, Cuttack. The aim of this project is to study the availability (quantity and quality) of feed and fodder in different districts and agroclimatic zones of Odisha and demonstrate efficient use of residues e.g. paddy straw, maize stover and others for livestock feed. In addition, it aims to demonstrate and disseminate improved and new varieties of fodder and dual-purpose crops, particularly maize, at department fodder farms and farmer fields in different agroclimatic zones of Odisha. In this context, ILRI has demonstrated different feed technologies and forage varieties in different districts of Odisha.

Demonstration of new feeding mechanism and feed technology

To augment the knowledge of farmers on livestock rearing for income generation and profit maximization, several trainings, awareness building activities and demonstration programs are carried out. To popularize the improved feed technology and feeding mechanism, ILRI carried out different activities, such as demonstrations on how to prepare concentrate feed with available local feed ingredients, demonstration of low-cost silage preparation, feeding mechanisms and improvement of farmers’ knowledge on feed quality available in their locality. During this period, demonstration programs were organized by ILRI to support chief veterinary officers and block veterinary officers of respective blocks. Issues related to feed and fodder production, mechanism of preparing concentrate feed by using locally available ingredients, cultivation of new high-yielding fodder crops and post-harvest management (preparation of low-cost silage) were demonstrated.

Table 1: List of villages covered under demonstration of new feed technology program

No.	District	Block	Village	Number of Participants
1	Jharsuguda	Laikera	Kuarmal	25
2	Sambalpur	Kuchinda	Lunduridihi	20
3	Bhadrak	Basudevpur	Barondua	19
4	Jajpur	Rasulpur	Ektala	16
5	Jharsuguda	Lakhanpur	Kiritmal	24
6	Sambalpur	Jujumura	Dumerpali	16
7		Rairakhola	Luhapank	17
8	Angul	Banarpal	Budhapanka	20
9	Bargarh	Attabira	Tope	20
10		Barpali	Bargoda	20
11		Sohella	Garvana	18

12		Birmaharajpur	Birmaharajpur	16
13	Sonepur	Dungurupali	Sukha	28
14		Sonepur	Buromunda	14
15	Cuttack	Badamba	Gobardhanpur	20
16		Banki-2	Durgapur	17
No.	District	Block	Village	Number of Participants
17	Jagatsinghpur	Balikuda	Khambakula	17
18		Jagatsinghpur	Ashrampatana	19
19		Kujanga	Teramanapur	19
20		Raghunathpur	Purana	20
21	Angul	Angul	Musapapuli	21
22		Chhendipada	Tukuda	32
23	Dhenkanal	Dhenkanal Sadar	Jhankira	34
24		Gondia	Baniapada	31
25		Odapada	Mangalpur	29
26	Jajpur	Binjharpur	Singhpur	28
27		Rasulpur	Betanda	20
28		Jajpur	Khusi	19
Total	12		28	599

Dissemination and demonstration of new varieties of fodder crops at farmer fields

To enhance the availability of quality green fodder at farmer fields, different varieties of fodder crops have been demonstrated in different agroclimatic zones. From each district, 5–10 farmers were selected for the demonstration. Following varieties (Hybrid Napier CO-5, Sampoorna, super Napier, perennial sorghum-COFS-29; 31, dual purpose maize-P3401; OMH-14/27; sorghum Sudan grass, sugar graze and CSH24MF; fodder tree-agasti) were demonstrated. During this period, these new varieties of fodder crops were demonstrated among 366 farmers covering 143.79 acres of land.

Demonstration of new varieties of fodder in farmer fields



Date: 22 August 2019; Crop: Maize;
Name of farmer: Muralidhar Naik;
Village: Bhaisa; Block: Patnagarh; District: Balangir



Date: 06 August 2019; Crop: Sampoorna;
Name of farmer: Harish Dey;
Village: Vellora; Block: Basta; District: Balasore



Date: 16 July 2019; Crop: CO-5;
Name of farmer: Prabhakar Sabat;
Village: Mangarajpur; Block: Tihidi;
District: Bhadrak



Date: 09 September 2019; Crop: COFS-29;
Name of the farmer: B. Ramchandra;
Village: Mahadiapur; Block: Goshani;
District: Gajapati



Date: 19 August 2019; Crop: Cowpea;
Name of farmer: Daka Gouda;
Village: Kerikerijhola; Block: Sheragada;
District: Ganjam



Date: 28 August 2019; Crop: COFS-29;
Name of farmer: Sanjay Nayak; Block: Likera;
District: Jharsuguda

Table 2: District-wide area under demonstration and cultivation of new and improved fodder varieties at farmer fields from 01 April–25 December 2019

No.	District	Block	Village	Number of Participants
1	Jharsuguda	Laikera	Kuarmal	25
2	Sambalpur	Kuchinda	Lunduridihi	20
3	Bhadrak	Basudevpur	Barondua	19
4	Jajpur	Rasulpur	Ektala	16
5	Jharsuguda	Lakhanpur	Kiritmal	24
6	Sambalpur	Jujumura	Dumerpali	16
7		Rairakhol	Luhapank	17
8	Angul	Banarpal	Budhapanka	20
9	Bargarh	Attabira	Tope	20
10		Barpali	Bargoda	20
11		Sohella	Garvana	18
12	Sonepur	Birmaharajpur	Birmaharajpur	16
13		Dungurupali	Sukha	28
14		Sonepur	Buromunda	14
15	Cuttack	Badamba	Gobardhanpur	20
16		Banki-2	Durgapur	17
17	Jagatsinghpur	Balikuda	Khambakula	17
18		Jagatsinghpur	Ashrampatana	19
19		Kujanga	Teramanapur	19
20		Raghunathpur	Purana	20
21	Angul	Angul	Musapapuli	21
22		Chhendipada	Tukuda	32

23	Dhenkanal	Dhenkanal Sadar	Jhankira	34
24		Gondia	Baniapada	31
25		Odapada	Mangalpur	29
26	Jajpur	Binjharpur	Singhpur	28
27		Rasulpur	Betanda	20
28		Jajpur	Khusi	19
Total	12		28	599

Demonstration of low-cost silage preparation and grain sprout production

Odisha is very prone to natural calamities like flood, drought and cyclone. On average, Odisha faces one severe calamitic shock (drought/flood/cyclone) every other year. The calamitic/disastrous situation affects the livestock sector so abruptly by devastating the feed availability. To overcome such unforeseen situations, proper storage of green fodder and green fodder production in a short time span could be the panacea to livestock and their production. Silage is an innovative process of storing surplus green fodder without causing much harm to its nutrition. It could serve as alternative green fodder source during dry seasons. A total of 22 silage demonstrations were made in 11 districts in 2019. Similarly, to produce green fodder in a very short span of time an innovative low-cost grain sprout production technique was demonstrated among 30 farmers in 12 districts. The entire process of fodder production is carried out at farmer fields with complete protection from rats.

We supported farmers with training and methodology and provided them with seeds, trays and other necessary materials.

Table 3: List of farmers supported for silage demonstration

No.	District	Perennial		Seasonal		Total	
		Land in acres	Number of farmers	Land in acres	Number of farmers	Land in acres	Number of farmers
1	Angul	14.4	32	2	6	16.4	38
2	Balasore	4.4	24	1.31	7	5.71	31
3	Bargarh	4.27	21	2	3	6.27	24
4	Bhadrak	11.1	27	0.9	3	12	30
5	Bolangir	2.9	14			2.9	14
6	Boudh	0.2	1	0.1	2	0.3	3
7	Dhenkanal	4.4	16			4.4	16
8	Gajapati	4.8	16	2.5	4	7.3	20
9	Ganjam	3.25	5	3.5	5	6.75	10
10	Jajpur	0.9	3			0.9	3
11	Jharsuguda	2.4	7	3.75	9	6.15	16
12	Kendrapara	10.66	29	0.5	4	11.16	33
13	Keonjhar	4.3	4			4.3	4
14	Khordha	7.08	20	1	1	8.08	21
15	Koraput	6.75	9			6.75	9
16	Mayurbhanj	2.42	12	0.85	6	3.27	18
17	Nabarangapur	0.75	2	0.5	1	1.25	3
18	Nayagada	8.4	10	3.5	2	11.9	12
19	Nuapada	5.1	11	1.81	7	6.91	18
20	Puri	10.12	18	1	1	11.12	19
21	Rayagada	0.85	3	0.5	1	1.35	4
22	Sambalpur	7.35	13	0.55	2	7.9	15
23	Sonepur	0.47	3	0.25	2	0.72	5
Grand total		117.27	300	26.52	66	143.79	366

Table 4: List of farmers supported for grain sprout production

No.	District	Block	Village	Name of farmer
1	Sonepur	Sonepur	Buromunda	Lalit Mohan Majhi
2	Bargarh	Barpali	Bargdda	Bibekananda Pradhan
3	Bargarh	Attabira	Tope	Banamali Bhoi
4	Bargarh	Sohella	Garvana	Mohana Barik
5	Kendrapada	Derabish	Harianka	Durlava Parida
6	Khordha	Balianta	Jhinti	Jagannath Nayak
7	Khordha	Balipatana	Srirampur	Tathagata Das
8	Khordha	Balipatana	Srirampur	Biswaranjan Mahapatra
9	Puri	Gop	Benipur	Ajit Sahu
No.	District	Block	Village	Name of farmer
10	Puri	Kakatpur	Gadanayarchheda	Sarmistha Pani
11	Bhadrak	Basudevpur	B. Binayakpur	Santosh Ku. Sarangi
12	Bhadrak	Basudevpur	Barondua	Sarat Behera
13	Bhadrak	Tihidi	Musanga	Satyajit Bal
14	Sambalpur	Rairakhhol	Luhapank	Ajit Bhera
15	Sambalpur	Jujumura	Dumerpali	Bedabyash Nayak
16	Sambalpur	Kuchinda	Gunduridihi	Nirakhya Kathari
17	Jharsuguda	Lakhanpur	Kirtimal	Jagabandhu Soa
18	Jharsuguda	Laikera	Kurnal	Rohit Nayak
19	Nayagada	Ranapur	Bapujipali	Bijay Senapati
20	Nayagada	Ranapur	Darpanarayanpur	Abhaya Charan Nayak
21	Nayagada	Odagaon	Sikharpur	Sushant Kumar Pradhan
22	Nayagada	Nuagaon	Korada	Arun Gochayat
23	Angul	Chendipada	Tukuda	Biren Sahu
24	Angul	Angul	Musapapuli	Lalmohan Sahu
25	Dhenkanal	Odapada	Mangalpur	Arjun Samal
26	Dhenkanal	Dhenkanal Sadar	Jankira	Rabinarayan Sandha
27	Dhenkanal	Gondia	Baniapada	Gopabandhu Rout
28	Jajpur	Rasulpur	Betanda	Bramhananda Rout
29	Jajpur	Binjharpur	Singhpur	Bharat Chandra Nayak
30	Jajpur	Jajpur	Kusi	Sanjay Kumar Mohanty
Total				30

Photos: Demonstration and promotion of silage and hydroponics

08 August 2019,
Silage at Barondua, Bhadrak27 September 2019,
Hydroponic at Harianka, Derabish, Kendrapada



23 September 2019,
Hydroponic at Barondua, Basudevpur, Bhadrak



13 September 2019,
Hydroponic at B. Binayakpur, Bhadrak



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