

**ALL INDIA COORDINATED RESEARCH
PROJECT ON GOAT IMPROVEMENT
(PANTJA – FIELD UNIT)**

**ANNUAL REPORT
2022-23**



**Department of LPM
College of Veterinary & Animal Sciences,
G.B. Pant University of Agriculture &
Technology, Pantnagar – 263145**



1. Unit Name: AICRP on UTTARAKHAND GOAT, Pantnagar Centre

2. Location: Department of Livestock Production Management
College of Veterinary & Animal Sciences
G. B. Pant University of Agric. & Technology,
Pantnagar – 263145 U. S. Nagar (Uttarakhand)

3. Reporting Period: 01 April, 2022 to 31 March, 2023

4. Project Duration

Date of Start: Aug. 29, 2014

Likely date of Completion: Long term

5. Project Team:**(i) Staff Position:**

Sl.	Post Sanctioned	Staff in Position			
	Designation	Sanctioned post	Filled/ vacant	Pay Scale	Vacant since (if any*)
1.	SRF	01	Vacant	31,000 (fix)	15-03-2021
2.	Project Fellow	02	Filled	20,000 (fix)	-
3.	Assistant in Research work	01	Filled	13,854/m	-
4.	Animal Attendants	04	Filled (01) Vacant (03 due to lack of funds)	13,050/m	01/10/2022

(ii) Details of PI and Co-PIs

Sl.	Name	Designation	Status	Time to be spent (%)	Work components assigned to individual scientist
1.	Dr .R.K. Sharma	Prof. & Head (LPM)	PI	75	Overall responsibility
2.	Dr. S. K. Singh	Prof. (LPM)	Co-PI	35	Management of nucleus flock
3.	Dr. J. L. Singh	Prof. Vety Med	Co-PI	25	Health care of goats
4.	Dr. Anil Kumar	Prof. LPM	Co-PI	25	Monitoring of field work
5.	Dr. R.R .Kumar	Assoc. Prof. (Para)	Co-PI	25	Health care of goats

6. Objectives:

1. To enhance productivity of Pantja goat in their habitat.
2. To develop germplasm resource centers for Pantja goats,
3. To validate and implement breeding, feeding and health control technologies in the field to improve goat production and health.
4. Capacity building of stakeholders and goat keepers for sustainable and profitable goat husbandry.
5. To determine role of goat husbandry in livelihood and food security of goat keepers.

7. Project Technical Programme and activities earmarked for the year (in brief):

1. Mapping of breeding tract and dividing the breeding tract into 5 clusters.
2. Survey and analysis of baseline data.
3. Purchase of male kids from farmers flock.
4. Rearing the male kids till age of sexual maturity.
5. Distribution of bucks, breeding of flocks and recording of data.
6. Recording of performance on body weight and milk yield, etc.
7. Collection of data on socio-economic and management practices.
8. Selection of male and females.
9. Collection of semen from improved bucks and storage in semen bank.

10. Collecting information on marketing.
11. Establishment of co-operative/ self-help groups.
12. Evaluation of role of women in goat rearing in the area.
13. Establishment of role of women in goat rearing in the area.
14. Conducting awareness & trainings camps.
15. Distribution of inputs like water bucket, feeding tub, torch, mosquito net, umbrella, medicine, MM, etc.
16. Follow up of health care (vaccination and deworming etc) of adopted goats.

Activities:

Targets and achievements:

Particulars	Target	Achievement
Breedable does covered	500	1,569
Distribution of bucks	20	12
Introduction of Oestrus Synchronization and AI	-	-
Identification and performance recording of progeny	500	1,497

Activities			No.	Total no.
Mapping of breeding tract and dividing into clusters		:	-	5
Survey and analysis of baseline data	Villages	:	11	221
	Households		44	1,020
Adoption of new villages & households	Villages	:	11	104
	Households		14	238
Purchase of male kids from farmers flock		:	21	145
Rearing the male kids till age of sexual maturity		:	4	98
Distribution of bucks for breeding of flocks and recording of data		:	12	194
Recording of performance on body weights and milk yield, etc.		:	1497 (BW) 272 (MY)	9913 (BW) 1151 (MY)
Establishment of co-operative/ self-help groups		:	-	04
Establishment of elite flock		:	One (2014)	One (2014)
Training of goat keepers		:	18 (662 beneficiaries)	56 (2644 beneficiaries)

8. Annual Progress Report:

a. Centres: Details of centres, buck rearing unit, flock coverage, new areas surveyed, flock management, etc

Flock coverage details

Centre	Opening as on 01.04.2022					Closing as on 31.03.2023				
	Breeders	Breeding bucks	Breedable does	Young stock	Total Goats	Breeders	Breeding bucks	Breedable does	Young stock	Total Goats
Bhimtal	67	67	352	382	1097	72	70	378	429	1157
Tilpuri	91	55	319	226	895	94	58	346	265	956
Bara	49	46	305	139	754	55	52	334	179	822
Kunda	10	8	153	71	356	10	8	158	81	376
Majhera	7	6	176	102	456	7	6	187	122	512
Total	224	182	1,305	920	3,558	238	194	1,403	1,076	3,823

- b. Flock Statistics: Field (No of registered breeders, flock statistics such as opening, addition, mortality and sale, and closing), buck rearing centre , flock size , etc

Flock statistics (2022-23)

Cluster	Age group	Opening balance		Additions (by kidding)		Addition (by purchase)		Total internal additions		Total additions		Deductions								Closing balance	
												Death		Sold		other		Total			
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Bhimtal	Young	289	399	234	209	1	3	563	542	1087	1153	31	35	99	107	-	-	130	142	297	415
	Adult	57	352	-	-	1	19	87	73	145	444	5	11	61	33	-	-	66	44	67	378
Tilpuri	Young	276	247	218	218	1	2	545	537	1040	1004	29	33	97	101	-	-	126	134	281	265
	Adult	53	319	-	-	-	17	79	57	132	393	4	11	59	30	-	-	63	41	64	346
Bara	Young	225	173	207	220	1	2	517	516	950	911	27	31	94	103	-	-	121	134	237	192
	Adult	51	305	-	-	-	15	68	55	119	375	2	10	57	29	-	-	59	39	59	334
Kunda	Young	86	94	50	58	-	-	102	93	238	245	17	17	37	42	-	-	54	59	95	98
	Adult	23	153	-	-	-	-	14	11	37	164	3	5	19	13	-	-	22	18	25	158
Majhera	Young	122	123	112	110	-	-	293	265	527	498	23	24	47	39	-	-	70	63	139	143
	Adult	35	176	-	-	-	-	24	17	59	193	3	7	21	17	-	-	24	24	43	187
Total	Young	998	1036	821	815	3	7	2020	1953	3842	3811	127	140	374	392	-	-	501	532	1049	1113
	Adult	219	1305	-	-	1	51	272	213	492	1569	17	44	217	122	-	-	234	166	258	1403
Grand Total		3,558		1,636		62		4,458		9,714		328		1,105		-		1,433		3,823	

- c. Base line survey: Base line survey, performance of unregistered flocks/ progeny of local rams. (for new units only)

- d. Selection criteria and source for bucks for purchase, Selection Differential Selection parameters

- Selection criteria: Body weights, prolificacy and milk yield
- Source of bucks for purchase: from the nearby areas of breeding tract

Selection differential:

Year	Traits	Population mean (kg)	S. D. (kg)
2022-23	12 month body weight	24.89	2.67

- e. Distribution of bucks: centre-wise distribution, does covered, re-distribution, disposal, and insurance, semen quality, Brucella screening, etc

- Status of Breeding bucks distributed (status in farmers flocks): 2022-23

Clusters	Opening balance	Died	culled	Taken back for redistribution	Addition by Distribution (new)	Re-distributed	Closing balance
Bhimtal	39	01	-	03	03	03	41
Tilpuri	35	01	-	-	03	-	37
Bara	26	-	-	02	06	02	32
Kunda	5	02	-	-	-	-	03
Majhera	5	-	-	-	-	-	5
Total	110	04	-	05	12	05	118

- Status of Bucks in rearing Centre: 2022-23

Opening	Purchased from		Addition by (taken back for redistribution)	Distributed (new)	Re-distributed	Died	Culled	Closing
	Farm	Field						
09	11	21	05	12	05	6	4	19

- f. Animal Identification (method, number of animals (buck/does/progeny) identified)

- Animal Identification details:

Trait	Number of animals identified (during the current year)					
	Centre 1	Centre 2	Centre 3	Centre 4	Centre 5	Total

Ear Tag	359	327	319	103	139	1,247
Tattoo	-	-	-	-	-	-
Other methods	-	-	-	-	-	-
Total	359	327	319	103	139	1,247

g. Growth performance at different ages(birth, 3, 6, 9 and 12 month age) for last six years and adult body weights (Centre and sex-wise) for year 2022-23

- Growth performance of nucleus flock/buck rearing centre/University farm flocks (kg) - for six years.

Particulars	Birth weight	3-m weight	6-m weight	9-m weight	12-m weight
Overall mean	2.15	10.63	14.72	19.01	23.42
Centre	2.15	10.63	14.72	19.01	23.42
Sex					
Male	2.27	11.16	15.27	19.83	23.85
Female	2.02	10.11	14.17	18.19	22.99

- Growth performance of filed flocks (kg) for last six years (2017-18 to 2021-23)

Particulars	Birth weight	3-m weight	6-m weight	9-m weight	12-m weight
Overall mean	2.13±0.01 (8,373)	10.66±0.02 (7,110)	15.21±0.03 (5,976)	19.24±0.03 (4,950)	23.46±0.07 (3,918)
Centre wise	-				
Bhimtal	2.13±0.01 (2,452)	10.63±0.04 (2,069)	15.12± 0.05 (1,737)	19.12±0.06 (1,436)	23.37±0.08 (1,147)
Tilpuri	2.11±0.01 (2,285)	10.62±0.04 (1,971)	15.13± 0.05 (1,660)	19.12±0.06 (1,399)	23.49±0.21 (1095)
Bara	2.11±0.01 (2,014)	10.60±0.05 (1,689)	15.13± 0.06 (1,414)	19.21±0.07 (1,156)	23.32±0.09 (911)
Kunda	2.10±0.01 (771)	10.53±0.07 (668)	15.15± 0.09 (569)	19.24±0.11 (456)	23.15±0.14 (360)
Majhera	2.21±0.01 (851)	11.11±0.07 (713)	15.93± 0.08 (596)	19.94±0.09 (503)	24.18±0.12 (405)
Sex wise	-				
Male	2.24±0.01 (4,174)	11.10±0.03 (3,514)	15.72± 0.03 (2,864)	19.91±0.05 (2,196)	24.44±0.06 (1,622)
Female	2.01±0.01 (4,199)	10.23±0.03 (3,596)	14.74± 0.04 (3,112)	18.69±0.04 (2,754)	22.76±0.11 (2,296)
Year wise	-				
2017-18	1.90 ±0.01 (898)	9.76±0.07 (650)	13.11±0.08 (395)	16.70±0.11 (302)	20.06±0.14 (173)
2018-19	1.94 ±0.01 (1,331)	9.79±0.06 (1,030)	13.51±0.07 (708)	17.23±0.09 (546)	21.02±0.11 (320)
2019-20	2.12±0.01 (1,627)	10.50±0.05 (1,248)	14.90±0.05 (1,261)	19.19±0.07 (966)	23.07±0.10 (740)
2020-21	2.17±0.01 (1,378)	10.82±0.05 (1,342)	15.45±0.06 (1,186)	19.32±0.08 (1,005)	23.55±0.24 (942)
2021-22	2.24±0.02 (1,642)	11.12±0.05 (1,509)	16.04±0.06 (1,114)	19.98±0.07 (993)	24.29 ±0.09 (788)
2022-23	2.26±0.01 (1,497)	11.21±0.04 (1,331)	16.12±0.05 (1,312)	20.13±0.06 (1,138)	24.42 ±0.07 (955)

- Body weight of adult goats (kg) (2022-23)

Particulars	1-2 Years	> 2 years of age
Overall mean	24.49	26.87
Centre wise	24.17	26.63
Sex wise		
Male	25.43	40.71
Female	22.92	25.62

h. Growth performance of progeny of distributed bucks and its comparative performance with progeny of local bucks for last six years (2017-18 to 2022-23)

- Growth performance of the progenies of distributed bucks (kg) (for last six years)

Centre	No of bucks	No. of progenies of distributed bucks	Birth weight	3-m weight	6-m weight	12-m weight	12 M BW of local bucks
Mean	194	9,025	2.13±0.01 (8,373)	10.66±0.02 (7,110)	15.21±0.03 (5,976)	23.46±0.07 (3,918)	19.73 (262)
Centre -							
Bhimtal	70	2,628	2.13±0.01 (2,452)	10.63±0.04 (2,069)	15.12± 0.05 (1,737)	23.37±0.08 (1,147)	19.81 (71)
Tilpuri	58	2,471	2.11±0.01 (2,285)	10.62±0.04 (1,971)	15.13± 0.05 (1,660)	23.49±0.21 (1095)	19.73 (72)
Bara	52	2,191	2.11±0.01 (2,014)	10.60±0.05 (1,689)	15.13± 0.06 (1,414)	23.32±0.09 (911)	19.79 (57)
Kunda	8	817	2.10±0.01 (771)	10.53±0.07 (668)	15.15± 0.09 (569)	23.15±0.14 (360)	19.63 (29)
Majhera	6	918	2.21±0.01 (851)	11.11±0.07 (713)	15.93± 0.08 (596)	24.18±0.12 (405)	19.68 (33)
Sex -							
Male	194	4,557	2.24±0.01 (4,174)	11.10±0.03 (3,514)	15.72± 0.03 (2,864)	24.44±0.06 (1,622)	19.73 (262)
Female	194	4,468	2.01±0.01 (4,199)	10.23±0.03 (3,596)	14.74± 0.04 (3,112)	22.76±0.11 (2,296)	-
Year -							
2017-18	50	1,019	1.90 ±0.01 (898)	9.76±0.07 (650)	13.11±0.08 (395)	20.06±0.14 (173)	18.40 (39)
2018-19	73	1,414	1.94 ±0.01 (1,331)	9.79±0.06 (1,030)	13.51±0.07 (708)	21.02±0.11 (320)	19.10 (46)
2019-20	85	1,692	2.12±0.01 (1,627)	10.50±0.05 (1,248)	14.90±0.05 (1,261)	23.07±0.10 (740)	19.80 (36)
2020-21	95	1,499	2.17±0.01 (1,378)	10.82±0.05 (1,342)	15.45±0.06 (1,186)	23.55±0.24 (942)	20.10 (42)
2021-22	98	1,765	2.24±0.02 (1,642)	11.12±0.05 (1,509)	16.04±0.06 (1,114)	24.29 ±0.09 (788)	20.30 (46)
2022-23	93	1,636	2.26±0.01 (1,497)	11.21±0.04 (1,331)	16.12±0.05 (1,312)	24.42 ±0.07 (955)	20.43 (53)

i. Reproduction (Does available and kidding %, weight at kidding, multiple births etc)

- Reproduction (2022-23)

Centre	No of does available for breeding	No of does kidded	No. of Kids born	Kidding per cent	Weight at kidding (kg)
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General systemic diseases	85	13	98	89	14	103	67	12	79	38	8	46	46	8	54	325	55	380
Alimentary system	95	21	116	120	23	143	85	20	105	47	4	51	51	9	60	398	77	475
Respiratory system	99	27	126	48	12	60	45	13	58	29	3	32	29	4	33	250	59	309
Skin and subcutaneous system	47	10	57	30	10	40	33	9	42	24	6	30	18	6	24	152	41	193
Total	326	71	397	287	59	346	230	54	284	138	21	159	144	27	171	1125	232	1357

m. Use of technologies (Synchronization, AI, etc) for improving reproduction: Under process

28.. Training to registered farmers and technology demonstration in field.

- Goat awareness and training programs **(18, total 56)**
- Farmers trained **(662, total 2,644)**
- Supplementation of concentrate and mineral mixture for goats under field conditions
- Regular deworming for goats
- Timely vaccination
- Dipping/ dusting
- Kids' cradle for protection from predators
- Use of goat feeders for reducing feed wastage
- Kids' brooding chamber for protection from chilling
- Elevated slatted floor & sleeping benches for protection from dampness and parasites
- Use of Goat Travis for natural service
- Provision of Silvi-pasture for maximum utilization of land for fodder & round the year green fodder availability

28.. ATR recommendations of last review meeting: None

28.. Impact analysis, Success story, linkages and other relevant information

Success story: One

Name of the Farmer: Mr. Ramesh

S/o Late Karam Chand

Village: Dhimari Block

Cluster: Tilpuri

Block: Gadarpur

Tehsil: Gadarpur

Distt.: U. S. Nagar



Mr. & Mrs. Ramesh

Mr. Ramesh S/o Late Sri Karam Chand is a resident of Village Dhimari Block, tehsil Gadarpur, Distt. U. S. Nagar. He is educated up to primary level and a traditional farmer engaged in agriculture and animal husbandry since last 12 years. He was rearing some goats along with cattle but due to various constraints he was not able to earn reasonably from livestock.



Meanwhile he came into the contact with project team during the survey work in his area and came to know about the ICAR funded AICRP on Goat which was successfully run by the Department of Livestock Production Management, College of Veterinary and Animal Sciences, Govind Ballabh Pant University of Agriculture and Technology Pantnagar since 2014. He then came to the department and showed keen interest to get the scientific knowledge about the Pantja goat rearing. He then attended training on Scientific Goat Rearing which was organized on 26.11.2015 under AICRP-Goat by the Department of Livestock Production Management, Pantnagar. After knowing about the suitability of the Pantja goat in the *Tarai* region he decided to sold his non-descript goats and purchased 10 pure Pantja goats from adjoining area as he got convinced that Pantja are better suited to local climatic conditions of *Tarai* region and also able to give more kids due to their higher prolificacy.



Pantja Flock of Mr. Ramesh

He was provided with 4 pure bred bucks of Pantja under the project successively on rotation basis. He modified the housing system, and husbandry practices in accordance with the advice of experts (scientists of AICRP project). He opted for semi-intensive system of rearing with 6-8 hours of grazing along with supplemental feeding of 50-100 g homemade concentrate mixture prepared with crushed maize/ broken rice/ wheat & cakes plus 10-15 g mineral mixture per day/ animal with other crop by-products to fulfill the nutrient requirements. Deworming and vaccination schedules were strictly followed with the help of project team. Various inputs like feed, mineral mixture along with all health support were provided by AICRP on Pantja field unit. On an average he keeps about 50 goats and sells about 30-35 kids per annum. According to Mr. Ramesh, he sells his bucks @ Rs. 6000- 8000 and goats @ Rs. 4000- 5000 on the basis of their physical appearance and body weights for the purpose of breeding and also for meat during the various festive season. His annual gross income from sell of goats and manure is approximately Rs. 1.50 to 2.50 lakhs and total annual expenditure is Rs. 0.75 to 1.00 lakhs giving an annual net income of Rs. 1.00 to 1.50 lakhs. Now Mr. Ramesh is a model goat rearer of the area and his success has become an inspirational story for others to earn a livelihood from Pantja goats.

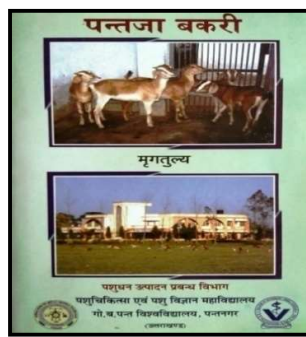
• Linkages created with other Organizations

- State Animal Husbandry Department
- N.G.Os
- SHGs
- UIRD

Leaflet and other documents-

One Folder on Pantaja goat

Technical bulletin, 2020 (Hindi) on “*Bakari Palan Ek Labhkari Vyavysay*”



Technologies developed

- At Centre a kids' brooding chamber has been developed to reduce the mortality in kids



- Development of kids' cradle for protection from predators



- Development of Silvi-pasture for economic feeding of goats



Some photographs of project work:



Pantja buck



Pantja doe



Pantja adult flock



Deworming of goats in project area



Pantja flock grazing in the open area



Housing of Pantja goats in the field



Buck Distribution



Training of goat farmers



Natural service of farmers' goats at LPM Department



Grazing of goats under the project area