UG Badole
Post Graduate Student, College
of Agriculture, Nagpur, PDKV,
Akola, Maharashtra, India

BR Wankhede
Assistant Professor, Animal
Science and Dairy Science,
College of Agriculture, Nagpur,
PDKV, Akola, Maharashtra,
India

VG Atkare
Professor, Animal Science and
Dairy Science, College of
Agriculture, Nagpur, PDKV,
Akola, Maharashtra, India

AB Motghare
Assistant Professor, Veterinary
Science, College of Agriculture,
Nagpur, PDKV, Akola,
Maharashtra, India

NP Kadam
Assistant Professor, Animal
Science and Dairy Science,
College of Agriculture, Sonai,
Maharashtra, India

Studies on production performance of Kathani cattle in Gondia tahsil of Gondia district

UG Badole, BR Wankhede, VG Atkare, AB Motghare and NP Kadam

Abstract
The present study entitled "Studies on morphological characteristics and productive performance of Kathani cattle in Gondia tahsil of Gondia district" was conducted in the year 2021-2022 by selecting 50 cattle of age group above 3 years and recorded with the mean value. The cattle were mostly found with bowl shaped udder, cylindrical shaped teats and small size of milk vein. The lactational milk yield of Kathani cattle was found to be 401.18±26.074 kg, average lactation period was of 169.16±3.995 days and average milk yield per day was 2.351±0.132 kg. The milk production performance of Kathani cattle is fair, hence, it can be considered as the draught breed of cattle and by adopting better management and nutrition practices its production can be increased.

Keywords: Geography of district, udder characteristics, production performance, Kathani cattle

Introduction
The global cattle population amounted to about one billion head in 2022, up from approximately 996 million in 2021 (Shahbandeh, M. 2021) [5]. India has world's largest livestock population accounting for over 37.28 per cent of cattle, 21.23 per cent of buffalo, 26.40 per cent of sheep (Sonavale *et al.* 2020) [7]. Average milk production of non-descript cow is about 1.50 kg/day. Although milk production of non-descript cattle is low, it shows high adaptation in different agro-climatic condition in India. There is variation for selection and improvement for milk production. Efforts are made to improve production performance of non-descript cattle through cross breeding with exotic cattle. However, it has not yielded desirable level as it possesses problem in maintaining exotic inheritance in field condition. Further, high disease incidence, repeated breeding, cow heat tolerance, difficulty in use of crossbred for work, high cost of maintains of some of problems experienced by farmer. It is therefore, necessary to improve upon the non-descript animal pool through selection (Khirari, 2014) [3].

Material and Methods
Source of data
The data on the morphological characteristics of Kathani cattle were used for present investigation from 10 villages *viz. G*arra, Seoni, Ghiwari, Nilaj, Dasgaon, Murpar, Rawanwadi, Nagra, Sawari, Arjuni of Gondia tahsil of Gondia district.

Collection of data
The data comprised of different observation and questionnaires designed relevant to the objectives of the study to collect the information from farmers.

Geography of the district
Gondia district lies at latitudes 20.390C and 21.380C North and longitudes 79.270C to 80.420C east. The district occupies an area of 5,234 km2 (2,021 sq mi) and has a population of 1,322,507of which11.95% were urban. Gondia is also known as Rice City due to the abundance of Rice Mill in the area. The average maximum and minimum temperature were 420C and 280C respectively.

Statistical Method
Testing of homogeneity for various udder characteristics was tested by r × c contingency as per Amble (1975) [1].

Corresponding Author:
UG Badole
Post Graduate Student, College
of Agriculture, Nagpur, PDKV,
Akola, Maharashtra, India

Results and Discussion
a. Udder characteristics
Udder shape
Table 1 indicates the percentage value of bowl-shaped udder was found to be highest (84%) followed by round shaped udder (8%), trough shaped udder (2%) and pendulous shaped udder (6%) in Kathani cattle. The chi-square test was applied and the chi-square value was found to be 93.20, which was statistically significant, indicating the variations in different udder shapes of cattle. Chavhan *et al*. (2022) [2] who observed bowl shaped udder (76%), round shaped udder (14%), trough shaped udder (6%) and pendulous shaped udder (4%).

Teat shape
The observations on the teat shape were found to be cylindrical, funnel and pear. Values in Table 1. indicates the number of cattle and the percentage value of different shapes of teat among which the cylindrical shape of teats was found

to be highest (74%), followed by funnel shaped teats (14%) and pear-shaped teat (12%) in Kathani cattle. The chi-square test was applied and the chi-square value was found to be 37.25, which was statistically significant and indicates the variation in the shape of teat. Kulkarni *et al*. (2013) [4] as they reported that teat shaped as cylindrical in (44.6%) Kathani cattle.

Milk vein
The observations on the milk vein were made in the Table 1. which were found to be large, medium and small in size. Small milk vein was found to be highest (64%), medium was found to be (32%) and large were found to be (4%) in Kathani cattle. The chi-square test was applied and the chi-square value was 27.05, which was statistically significant and indicates the variation in the size of milk vein. Sharma *et al*. (2012) [6] who observed in Shahabadi cows with small to medium milk vein.

Table 1: Shape of udder, teat shape and milk vein characteristics along with χ^2 values of Kathani cattle

Sr. No.	Characters	No. of observations	Percentage %	Chi-square (χ^2)	D.F.	Significance
A			Udder shape			
	Bowl	42	84	93.20	3	*
	Round	4	8			
	Trough	1	2			
	Pendulous	3	6			
B			Teat shape			
	Cylindrical	37	74	37.25	2	*
	Funnel	7	14			
	Pear	6	12			
C			Milk vein			
	Large	2	4	27.05	2	*
	Medium	16	32			
	Small	32	64			

b. Productive performance
Lactational milk yield
Lactational milk yield is important trait for selection purpose. The data presented in Table 2. The average lactational milk

yield of 50 adult female Kathani cattle was observed to be 401.18±26.074 kg. Chavhan *et al*. (2022) [2] observed that the lactation milk yield was 520.61±21.59 kg in Kathani cattle.

Table 2: The mean value of lactational milk yield of Kathani cattle

Sr. No.	Age group (year)	No. of animals	Lactational milk yield (kg)		Average ± S.E.	S.D.
			Max	Min		
1	Above 3 years	50	865	127	401.18±26.074	184.378

Lactation period
From Table 3. it was recorded that the average lactation period of 50 adult female Kathani cattle was found to be

169.16±3.995 days. Thalkar *et al*. (2016) [8] observed that the daily milk yield in non-descript cattle of Raigad district was 1.47±0.21 kg.

Table 3: The mean value of lactation period of Kathani cattle

Sr. No.	Age group (year)	No. of animals	Lactation period (days)		Average ± S.E.	S.D.
			Max	Min		
1	Above 3 years	50	225	123	169.16±3.995	28.254

Milk yield per day
From the Table 4. it was found that the average daily milk yield per day of Kathani cattle belonging to age group above

3 years was 2.351±0.132 kg. Kulkarni *et al*. (2013) [4] who observed the milk yield per day was 4 to 5 litre in Kathani cattle.

Table 4: The mean value of milk yield per day of Kathani cattle

Sr. No.	Age group (year)	No. of animals	Milk yield per day (kg)		Average ± S.E.	S.D.
			Max	Min		
1	Above 3 years	50	4.63	1.03	2.351±0.132	0.937

Conclusion
The milk production performance of Kathani cattle is fair, hence, it can be considered as the draught breed of cattle having higher biological potential for improvement in production.

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