Review Article

CARCASS CHARACTERISTICS OF NATIVE CHICKEN VARIETIES OF INDIA – REVIEW

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ABSTRACT

The total meat production in India is 9.29 millions out of which 4.78 million tonnes is from poultry and the growth of poultry meat sector has increased by 6.86 % over previous year. The growth rate of backyard poultry population from 2012 to 2019 (45.79 %) is ten times higher than when compared to commercial poultry (4.50 %) (BAHS, 2022). The native chickens are slowly growing in nature and are preferred for better flavor and for the belief that natural, less intensive management systems provide desi birds with higher welfare levels, resulting in much better product quality and great demand. The meat from native chicken is more delicious and provides nutritional security and economic support for the rural and most suited for backyard system of rearing. The aim is to study the carcass traits of available native chicken in India and compare it with native chicken at Hosur. The carcass characteristics of the native chicken variety at Hosur was evaluated by sacrificing 25 birds of each sex at 16 weeks of age. The observed results were compared with the performances of other varieties of native chicken in India with respect to the parameters like New York dressing yield, eviscerated yield, Ready to cook yield, cut-up parts yield, Meat bone ratio and Giblets yield at each sex of the bird at different age of slaughter especially at 16 weeks of age. It is concluded that the native chicken variety of CPPM which had good carcass traits and could be utilized for table delicacy.

Key words: Carcass characters, Native chicken, India

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INTRODUCTION

In India there are around nineteen breeds of native chicken recognized and registered as indigenous breeds of chicken in India (NBAGR, 2019). Native chickens are slow growing bird, reared under low input

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management system with high output in the performance as resulted from backyard rearing. Native chicken meat is highly preferred by the meat lovers due to its better taste, colour and flavour and it also fetches high price. It is postulated that desi chicken reared under less intensive system would result in better meat quality (Mir *et al.*, 2017) and also low in antibiotic and toxic residues. The demand for meat of slow growing birds (native chicken) are rising because it does not require feeding of antibiotic and growth promoters. Meat and meat products serve as a good source of quality protein containing all essential amino acids, fats, minerals, vitamins and other essential nutrients (Zhang *et al.*, 2010). The meat of native chicken breeds possess a good profile of protein, fat, minerals, vitamins and other essential nutrients making it a preferred choice for human nutrition over other types of meat. This study aims to identify native chicken breeds with the most desirable carcass characteristics. The objective of the study is to compare the carcass characteristics of native chicken varieties in India and to come to a conclusion of best producing native chicken. The carcass characteristics of native chicken variety of CPPM, Hosur is presented in the Table 1.

New York dressed yield

The New York dressed yield of male grower, female grower and pooled sex of birds of native chicken variety of CPPM, Hosur slaughtered at 12th week was 92.70 ± 0.42, 90.40 ± 0.95 and 91.55 ± 0.60, respectively and similarly at 16th week was 90.08 ± 0.12, 89.23 ± 0.19 and 89.65 ± 0.12, respectively by Thirunavukkarasu *et al.* (2022) and is highly in accordance with Vasanthi *et al.* (2023) in Siruvidai chicken of Tamil Nadu at 16 weeks of age as in male (90.50 ± 0.14), in female (88.85 ± 0.09) and in pooled sex (89.67 ± 0.23).

Dressing yield

Thirunavukkarasu *et al.* (2022) observed the dressed carcass yield per cent of male grower, female grower and pooled sex of birds slaughtered at 12th week as 70.59±0.43, 65.37±1.47 and 67.97±1.08 per cent, respectively and similarly at 16th week, it was 71.47±0.19, 69.91±0.17 and 70.68±0.17, respectively in the Native chicken variety at Hosur which is in accordance with the findings of Vasanthi *et al.* (2023) in Siruvidai chicken slaughtered at 16 weeks of age in male (70.83 ± 0.42), female (68.41 ± 0.34) and in pooled sexed birds (69.62 ± 0.41). The dressing yield in Ankleshwar chicken was 62.44 as observed by Tantia *et al*. (2006). Behera *et al.* (2017) observed in Hansli chicken male, female and pooled chicken, which was 75.09±0.07, 72.10 ± 0.004 and 73.60 ± 0.45 respectively at the age of 16 weeks; Kalita *et al.* (2021) recorded the dressing yield in male (73.88 ± 2.68) and in female (72.22 ± 3.51) in Daothigir chicken breed of Assam at 20 weeks of age. Vij *et al.* (2015) reported 60 % yield in Harringhata chicken, 65 -74 per cent was recorded in Miri chicken (Vijh *et al.*, 2005) and Kalita *et al*. (2012) reported 66.09 ± 5.62 % in Native chicken in Guwahati. Higher dressing yield under intensive system observed by Gopinath

et al. (2013) in male, female and pooled Native chicken of Mysore division of Karnataka was 79.97 ± 0.61, 81.81 ± 0.52 and 82.19 ± 0.58, respectively and also 90.74 ± 1.06 per cent was recorded in Desi chicken at 14 weeks of age under deep litter condition by Bhimraj *et al.* (2018). The average dressing yield of 76 % was recorded in TANUVAS Aseel chicken (Omprakash *et al.,* 2018). Preethi *et al.* (2018) recorded 67.57 ± 1.41 in male, 67.38 ± 0.46 in female and 67.47 ± 0.67 in pooled sex in Kadaknath breed of chicken at 20 weeks of age and 90.13 % in male and 88.13 % in female with overall mean of 89.13 % in Tellicherry chicken (Girishkumar *et al.*, 2012).

Eviscerated yield

The eviscerated yield (per cent) of male grower, female grower and pooled sex of birds slaughtered at 12th week was 65.60±0.59, 60.10±1.52 and 62.85±1.14, respectively and similarly at 16th week was 67.37±0.19, 65.21±0.21 and 66.28±0.21, respectively (Thirunavukkarasu *et al.*, 2022) and is in congruence with the findings of Preethi *et al.* (2018) who recorded in male (66.21 ± 1.44), female (65.31 ± 0.70) and pooled sex (65.76 ± 0.75) of Kadaknath breed of chicken at 20 weeks of age. The higher yield of evisceration noticed at 14 weeks of age under deep litter system in Desi chicken was 70.58 ± 1.26 (Bhimraj *et al.*, 2018) and Behera *et al.* (2017) observed that eviscerated yield in Hansli male grower, female grower and pooled sex of birds was 70.20 ± 0.06, 66.85 ± 0.09 and 68.53 ± 0.50, respectively at 16 weeks of age. The eviscerated yield of the Native chicken of Mysore division of Karnataka was 69.12 ± 0.50, 69.76 ± 0.60 and 71.70 ± 1.03, respectively under commercial method of rearing and the mean eviscerated yield of male and females of Tellicherry chicken was 72.24 and 65.94, respectively with the overall mean of 69.09 (Girishkumar *et al.*, 2012) and similar results in male (65.11 ± 0.40), female (62.77 ± 0.33) and pooled (63.94 ± 0.39) were observed by Vasanthi *et al.* (2023) in Siruvidai chicken of Tamil Nadu.

Giblets Yield

The giblets yield (per cent) of male grower, female grower and pooled sex of birds slaughtered at 12th week was 4.99±0.22, 5.26±0.15 and 5.12±0.13, respectively and similarly at 16th week was 4.10±0.11, 4.70±0.14 and 4.40±0.10, respectively was recorded by Thirunavukkarasu *et al.* (2022) and is compatible with the findings of Preethi *et al.* (2018) who recorded the yield in male (3.78 ± 0.05), female (4.36 ± 0.25) and pooled sex (4.07 ± 0.17) of Kadaknath chicken at 20 weeks of age. Bhimraj *et al.* (2018) recorded the giblets weight of desi chicken at the age of 14 weeks under deep litter management as 6.68 ± 0.36 and same findings were also observed by Behera *et al.* (2017) in Hansli breed of chicken slaughtered at the age of 16 weeks in male (6.95 ± 0.08), female (7.85 ± 0.14) and pooled sex (7.40 ± 0.15). Kalita *et al.* (2021) recorded the giblets yield at 20 weeks of age in male (5.76 ± 0.67) and female (6.75 ± 1.02) chicken of Daothigir chicken in Assam. The highest giblets weight of male (5.24 g) and female (6.82 g) with the overall mean of

6.03 g was recorded in Tellicherry chicken by Girishkumar *et al.* (2012) due to the hypertrophied gizzard muscles and highly active liver. The yield of 4.9 % in Miri chicken (Vijh *et al.*, 2005) and 5.00 % in Aseel breed of chicken at TANUVAS (Omprakash *et al.,* 2018) was recorded. The production performance of Native chicken that were reared in Mysore division of Karnataka was 5.31 ± 0.12, 5.30 ± 0.41 and 4.33 ± 0.14, respectively in male, female and pooled chicken and is closer to the findings of Vasanthi *et al.* (2023) in male (5.60 ± 0.03), in female (5.80 ± 0.02) and pooled sex (5.70 ± 0.02) of Siruvidai chicken. This is lower than those reported in Aseel by Mohapatra *et al.* (1982) and in Mizoram native chicken by Sharma (1995).

Breast yield

Thirunavukkarasu *et al.* (2022) recorded the yield of breast meat (per cent) of male grower, female grower and pooled sex in the Native chicken variety at Hosur, slaughtered at 12th week and it was 13.77±0.40, 12.72±0.48 and 13.24±0.33, respectively and similarly at 16th week, it was 15.14±0.24, 14.48±0.21 and 14.81±0.16, respectively. The highest yield was observed by Tantia *et al.* (2006) in Ankleshwar chicken (22.76 %) and 22.92 ± 0.68 per cent was observed in desi chicken slaughtered at the age of 14 weeks under extensive system (Bhimraj *et al.*, 2018). The breast yield was observed in Miri chicken (21.5 %) by Vijh *et al.* (2005), in TANUVAS Aseel chicken (22.00 %) by Omprakash *et al.* (2018) and in Tellicherry chicken (male: 18.17 %, female: 24.52 %) by Girishkumar *et al.* (2012). The highest breast yield was obtained in Siruvidai chicken as observed by Vasanthi *et al.* (2023) in male (22.51 ± 0.06), female (21.50 ± 0.16) and pooled sex (22.01 ± 0.15). This is due to well-developed back bones in females due to the influence of estrogen hormone. Behera *et al.* (2017) recorded the breast yield in Hansli breed at the age of 16 week as 20.54 ± 0.19 per cent in male, 25.03 ± 0.57 % in female with pooled mean of 22.79 ± 0.73 per cent and Kalita *et al.* (2021) found the breast yield in male cockerels (23.21 ± 2.23) and in female pullets (27.79 ± 3.02) of Daothigir chicken at 20 weeks of age in Assam. Preethi *et al.* (2018) recorded lowest breast yield in Kadaknath breed male (17.02 ± 0.19), female (16.73 ± 1.34) and pooled sex (16.88 ± 0.61) at 20 weeks of age. Iqbal *et al.* (2009) recorded breast yield in Kashmir Favorella chicken as 28.68 ± 0.40 per cent in male cockerels and in female pullet, it was 31.89 ± 0.49 per cent. The results observed by Gopinath *et al.* (2013) in male, female and pooled chicken of Native breed of chicken in Mysore division of Karnataka was 15.75 ± 0.38, 14.88 ± 0.53 and 15.97 ± 0.45, respectively under intensive system which was lower compared to those reported by Mohapatra *et al.* (1982) in Aseel breed and Sharma (1995) in Mizoram native chicken.

Back yield

The yield of back muscle (per cent) of male grower, female grower and pooled sex slaughtered at 12th week was 12.93±0.92, 10.33±1.65 and 11.63±0.95,

Table. 1. Mean (±S.E.) carcass characteristics (per cent of pre-slaughter weight) and cut-up parts yield of the Native chicken variety maintained at CPPM, Hosur

Age/Parameters	12th week			16th week		
	Male (n=6)	Female (n=6)	Pooled (n=12)	Male (n=25)	Female (n=25)	Pooled (n=50)
Carcass characteristics						
New York dressed yield	92.70±0.42	90.40±0.95	91.55±0.60	90.08±0.12	89.23±0.19	89.65±0.12
Dressing yield	70.59±0.43	65.37±1.47	67.97±1.08	71.47±0.19	69.91±0.17	70.68±0.17
Eviscerated yield	65.60±0.59	60.10±1.52	62.85±1.14	67.37±0.19	65.21±0.21	66.28±0.21
Heart	0.45±0.43	0.46 ±0.05	0.45±0.02	0.40±0.02	0.46±0.02	0.43±0.02
Gizzard	2.41±0.15	2.13±0.12	2.27±0.10	1.97±0.07	2.34±0.10	2.15±0.06
Liver	2.13±0.19	2.67±0.12	2.40±0.13	1.73±0.05	1.90±0.08	1.82±0.05
Giblets yield	4.99±0.22	5.26±0.15	5.12±0.13	4.10±0.11	4.70±0.14	4.40±0.10
Cut-up parts						
Breast yield	13.77±0.40	12.72±0.48	13.24±0.33	15.14±0.24	14.48±0.21	14.81±0.16
Back yield	12.93±0.92	10.33±1.65	11.63±0.95	9.93±0.37	11.40±0.38	10.67±0.28
Thigh yield	10.28±0.39	10.03±0.28	10.16±0.22	11.59±0.15	10.90±0.14	11.24±0.11
Drumstick yield	10.97±0.26	10.69±0.46	10.83±0.25	11.82±0.20	10.51±0.16	11.16±0.16
Neck yield	3.84±0.09	3.57±0.13	3.70±0.08	4.72±0.08	4.42±0.09	4.57±0.06
Wing yield	9.90±0.23	9.38±0.38	9.64±0.22	10.01±0.15	9.47±0.14	9.74±0.11
Skin yield	3.91±0.05	3.38±0.10	3.65±0.10	4.16±0.06	4.03±0.04	4.09±0.03
Meat bone ratio	2.46±0.02	2.36±0.07	2.41±0.04	2.26±0.01	2.16±0.00	2.21±0.01

n- Number in parentheses indicate the number of observations
(Thirunavukkarasu *et* al, 2022)

respectively and similarly at 16th week was 9.93±0.37, 11.40±0.38 and 10.67±0.28, respectively in the Native chicken variety at Hosur (Thirunavukkarasu *et al.*, 2022). The highest back yield (20.94 %) was observed in Ankleshwar chicken (Tantia *et al.*, 2006); in desi chicken it was 19.42 ± 0.71 at 14 weeks of age under extensive system (Bhimraj *et al.*, 2018); in Miri chicken 21.0 per cent was recorded by Vijh *et al.* (2005); in Aseel chicken it was 20.00 % (Omprakash *et al.,* 2018). In Daothigir chicken, the back yield recorded was 15.91 ± 1.61 (male), 14.98 ± 1.37 (female) with mean of 21.51 per cent by Kalita *et al.* (2021) at 20 weeks of age. Similarly, in Tellicherry male, female and pooled chicken, it was 22.60 ± 0.18, 19.91 ± 0.21 and 21.26 ± 0.37, respectively observed by Girishkumar *et al.* (2012). This is because of the well-developed back bones in female due to influence of estrogen. Behera *et al.* (2017) recorded the back yield in Hansli breed at the age of 16 week which was 18.15 ± 0.16 per cent (in male), 18.09 ± 0.09 % (in female) with pooled mean of 18.12 ± 0.08 per cent. Iqbal *et al.* (2009) recorded the back yield in Kashmir Favorella chicken as 17.44 ± 0.26 per cent in cockerels and in pullets as 19.64 ± 0.42 per cent. The results observed by Gopinath *et al.* (2013) in Native chicken of Mysore division of Karnataka in male, female and pooled chicken which was 15.55 ± 0.22, 15.74 ± 0.21 and 16.56 ± 0.73, respectively under commercial method of rearing which is lower compared to those reported by Mohapatra *et al.* (1982) in Aseel breed and Sharma (1995) in Mizoram native chicken.

Thigh yield

Thirunavukkarasu *et al.* (2022) observed that the thigh yield (per cent) of male grower, female grower and pooled sex slaughtered at the age of 12th week was 10.28±0.39, 10.03±0.28 and 10.16±0.22, respectively and also at the age of 16th week, it was 11.59±0.15, 10.90±0.14 and 11.24±0.11, respectively in the Native chicken variety at Hosur. Higher yield of thigh was recorded in Ankleshwar chicken (16.31 %), in desi breed at the age of 14 weeks by Bhimraj *et al.* (2018), in Miri chicken (16.0 %) by Vijh *et al.* (2005), in Aseel breed of chicken (16.00 %) at TANUVAS by Omprakash *et al.* (2018) and in Hansli chicken male (18.04 ± 0.05 %), female (16.09 ± 0.45 %) and in pooled sex (18.35 ± 0.25 %) by Behera *et al.* (2017). Similarly, Iqbal *et al.* (2009) observed 19.96 ± 0.22 in cockerels and 17.32 ± 0.31 in pullets of Kashmir Favorella chicken and Kalita *et al.* (2021) recorded in male (19.27 ± 2.12) and female (14.47 ± 1.75) in Daothigir breed of chicken in Assam at 20 weeks of age. Also, similar results were reported in male (17.13±0.17), female (15.16 ± 0.21) and pooled sex (16.15 ± 0.28) in Siruvidai chicken of Tamil Nadu by Vasanthi *et al.* (2023). Gopinath *et al.* (2013) revealed that Native breeds of chicken at Karnataka showed a close relation with the findings of the current research in male, female and pooled Native chicken of Mysore division of Karnataka which was 10.22 ± 0.29, 11.44 ± 0.29 and 11.43 ± 0.21, respectively but lower when compared to findings observed by Mohapatra

et al. (1982) in the Aseel chicken and Sharma (1995) in Mizoram native chicken.

Drumstick yield

The yield of drumstick in male grower, female grower and pooled sex at the age of 12th week was 10.97±0.26, 10.69±0.46 and 10.83±0.25, respectively and similarly at 16th week was 11.82±0.20, 10.51±0.16 and 11.16±0.16, respectively found in native variety of chicken by Thirunavukkarasu, *et al.* (2022). Tantia *et al.* (2006) recorded the highest yield of 16.59 per cent in Ankleshwar chicken. In desi chicken (15.56 ± 0.46 %) at the age of 14 weeks was observed by Bhimraj *et al*. (2018); in Miri chicken it was 14.9 per cent by Vijh *et al.* (2005). TANUVAS Aseel chicken drumstick yield (16.50 %) was recorded by Omprakash *et al.* (2018) and Kalita *et al.* (2021) found that the drumstick yield was 16.06 ± 2.68 in male and 12.91 ± 1.95 in female Daothigir chicken at Assam. Similarly, in Siruvidai chicken, it was 15.21 in male and 13.43 ± 0.39 in female as observed by Vasanthi *et al.* (2023) in Tamil Nadu. The comparable yield was recorded by Gopinath *et al.* (2013) in Native chicken of Mysore division of Karnataka which was 11.57 ± 0.21, 11.15 ± 0.18 and 10.84 ± 0.30, respectively in male female and pooled groups which is lower when compared to those reported by Mohapatra *et al.* (1982) in Aseel breed and Sharma (1995) in Mizoram native birds and Iqbal *et al.* (2009) in Kashmir Favorella (male: 14.53 ± 0.14 % and female: 12.31 ± 0.21%).

Neck yield

The yield of neck muscle (per cent) of male grower, female grower and pooled sex at the age of 12th week was 3.84±0.09, 3.57±0.13 and 3.70±0.08, respectively and also at the age of 16th week, it was 4.72±0.08, 4.42±0.09 and 4.57±0.06, respectively in Native birds at Hosur. The neck yield in Ankleshwar chicken is 6.69 (Tantia *et al.*, 2006) and 6.4 in Miri chicken (Vijh *et al.*, 2005). In Kashmir Favorella chicken male, it was 8.14 ± 0.07 and in female, it was 6.93 ± 0.14 (Iqbal *et al.,* 2009) and in Tellicherry chicken male (9.37), female (6.64) with the mean of 8.0 (Girishkumar *et al.,* 2012). Similarly, it was 6.07 ± 0.02, 5.88 ± 0.04 and 5.98 ± 0.03, respectively in Siruvidai chicken as reported by Vasanthi *et al.* (2023) due to long back conformation. Gopinath *et al.* (2013) observed the nearest value to the Native chicken of Mysore division of Karnataka 5.11 ± 0.12, 5.62 ± 0.13 and 5.22 ± 0.17, respectively which was lower compared to those reported by Mohapatra *et al.* (1982) in Aseel breed and Sharma (1995) in Mizoram native chicken. The Hansli chicken recorded the highest yield of 10.44 ± 0.17 in male, 8.85 ± 0.58 in female and 9.65 ± 0.37 with pooled mean as reported by Behera *et al.* (2017) and 7.00 % in Aseel breed of chicken at TANUVAS (Omprakash *et al.,* 2018) and Kalita *et al.* (2021) recorded neck yield in cockerels (8.24 ± 1.56) and in pullet (7.86 ± 1.67) at 20 weeks of age of Assam Daothigir chicken.

Wing yield

Thirunavukkarasu *et al.* (2022) found that the yield of wing (per cent) of male grower, female grower and pooled sex at the age of 12th week was 9.90±0.23, 9.38±0.38 and 9.64±0.22, respectively and similarly at 16th week was 10.01±0.15, 9.47±0.14 and 9.74±0.11, respectively in the Native chicken variety at Hosur. The above findings were close to the recording in Ankleshwar chicken (9.54 %) and was comparable at 16 weeks in Native chicken of Mysore division of Karnataka being 9.61 ± 0.19, 9.23 ± 0.33 and 10.57 ± 0.72, respectively which is lower compared to those reported by Mohapatra *et al.* (1982) in Aseel breed and Sharma (1995) in Mizoram native chicken. The wing muscle yield was higher (11.6 %) in Miri chicken by Vijh *et al.* (2005); in Hansli chicken, male (14.86 ± 0.31), female (13.48 ± 0.16) with the mean of 14.17 ± 0.26 as reported by Behera *et al.* (2017). Similarly, it was 12.16 ± 0.21, 11.53 ± 0.18 and 11.85 ± 0.16, respectively in Siruvidai breed found by Vasanthi *et al.* (2023); in desi breed (12.81 ± 0.53) by Bhimraj *et al.* (2018); in Tellicherry male chicken (14.14 %) with mean of 12.03 per cent by Girishkumar *et al.* (2012). The lowest yield in Kashmir Favorella chicken was recorded by Iqbal *et al.* (2009) as 9.78 ± 0. 20 in male and 10.04 ± 0.14 in female. The yield in Siruvidai chicken as reported by Vasanthi *et al.* (2023) is closer to the findings of Thirunavukkarasu *et al.* (2022) especially with respect to female chicken. It was observed that wing yield of TANUVAS Aseel chicken was 13.50 % by Omprakash *et al.* (2018). Daothigri chicken at Assam had recorded wing yield of 11.05 ± 2.03 in male, 13.82 ± 3.10 in female as reported by Kalita *et al.* (2021) with the lowest observations by Preethi *et al.* (2018) in male (6.33 ± 0.14), female (5.55 ± 0.22) with the mean of 5.94 ± 0.217 in Kadaknath breed of chicken.

Meat bone ratio

The meat bone ratio of male grower, female grower and pooled sex slaughtered at 12th week was 2.46±0.02, 2.36±0.07 and 2.41±0.04, respectively and similarly at 16th week was 2.26±0.01, 2.16±0.00 and 2.21±0.01, respectively as observed by Thirunavukkarasu *et al.* (2022) and similar observation was recorded by Behera *et al.* (2017) in Hansli chicken male (2.118 ± 0.112), female (2.512 ± 0.045) with pooled mean of 2.287 ± 0.032 at 16 weeks of age. In desi chicken at 14 weeks of age under extensive system of rearing, it was 1.24 ± 0.03 as reported by Bhimraj *et al.* (2018) and the lowest yield was recorded in Siruvidai chicken of Tamil Nadu by Vasanthi *et al.* (2023) in male (0.99 ± 0.01), female (0.90 ± 0.01) and pooled sex (0.95 ± 0.01) at 16 weeks of age.

Liver yield

Thirunavukkarasu *et al.* (2022) recorded that the liver yield of male, female and pooled sex slaughtered at 12th week was 2.13 ± 0.19, 2.67 ± 0.12 and 2.40±0.13, respectively and similarly at 16th week was 1.73 ± 0.05, 1.90 ± 0.08 and 1.82 ±0.05, respectively. The liver yield of 2.91 % was observed by Tantia *et al.* (2006) in Ankleshwar chicken and in Native

chicken of Mysore division of Karnataka, it was 1.97 ± 0.04, 1.97 ± 0.16 and 1.76 ± 0.06, respectively and is higher than those reported by Sharma and Khedkar (2005) for Kadaknath chicken under confinement. The yield of liver was higher in Miri chicken (2.9 %) reported by Vijh *et al.* (2005) and in female Kashmir Favorella chicken (3.35 ± 0.23) by Iqbal *et al.* (2009). In Siruvidai chicken, observed by Vasanthi *et al.* (2023), the yield in male (2.88 ± 0.01), female (2.96 ± 0.01) and mean of 2.92 ± 0.01 was comparable with the findings of Girishkumar *et al.* (2012) in Tellicherry chicken (male: 2.71 %, female: 3.10 %) and Kalita *et al.* (2021) as in Daothigir chicken (male: 2.14 ± 0.63 and female: 2.74 ± 0.59), respectively. The lowest yield was recorded in male (1.14 ± 0.06) and female (1.63 ± 0.04) of Kadaknath chicken at the age of 20 weeks as observed by Preethi *et al.* (2018).

Heart yield

The heart yield of male, female and pooled sex slaughtered at 12th week was 0.45 ± 0.43, 0.46 ± 0.05 and 0.45 ± 0.02, respectively and similarly at 16th week was 0.40 ± 0.02, respectively by Thirunavukkarasu *et al.* (2022). The yields of heart in different native chickens are 1.12 % in Ankleshwar chicken by Tantia *et al.* (2006); in Miri chicken male (0.70 %) and female (2.9 %) by Vijh *et al.* (2005); in Kashmir Favorella male (2.04 ± 0.06) and female (3.44 ± 0.22) by Iqbal *et al.* (2009); in Tellicherry chicken male (0.82 %), female (0.72 %) and with mean of 0.77 per cent by Girishkumar *et al.* (2012). Similar observations were recorded in Hansli chicken male (0.62 ± 0.02), female (0.68 ± 0.04) with mean of 0.65 ± 0.02 by Behera *et al.* (2017). In Native chicken of Mysore division of Karnataka, Gopinath *et al.* (2013) recorded 1.97± 0.04, 1.97 ±0.16 in male and female with the mean of 1.96 ± 0.06, respectively. The lowest yield was recorded in Siruvidai chicken male (0.39 ± 0.01), female (0.42 ± 0.01) by Vasanthi *et al.* (2023) and similarly in Assam Daothigir male chicken (0.96 ± 0.24), female (0.64 ± 0.19) by Kalita *et al.* (2021) and in Kadaknath male chicken (0.39 ± 0.01), female (0.46 ± 0.00) by Preethi *et al. (*2018), respectively.

Gizzard yield

The gizzard yield of male grower, female grower and pooled sex slaughtered at the age of 12th week was 2.41 ± 0.15, 2.13 ± 0.12 and 2.27 ± 0.10, respectively and similarly at 16th week was 1.97 ± 0.07, 2.34 ± 0.10 and 2.15 ±0.06, respectively by Thirunavukkarasu *et al.* (2022). The gizzard musculature varies with breed and nature of the diet in chicken. In Daothigir breed, the gizzard yield in male chicken (1.93 ± 0.48) and female chicken (1.35 ± 0.39) was observed by Kalita *et al.* (2021) and the yield in Kadaknath male (1.98 ± 0.00), female (2.27 ± 0.20) was observed by Preethi *et al.,* (2018). Higher yield was found in Ankleshwar chicken (3.14 %) as observed by Tantia *et al.* (2006), in Tellicherry chicken (3.00 %) by Girishkumar *et al.* (2012) and in Hansli chicken male (3.35 ± 0.07), female (4.07 ± 0.07) with the mean of 3.71 ± 0.07 by Behera *et al.* (2017). Similarly studies in Siruvidai chicken by Vasanthi *et al.* (2023) also

showed gizzard yield in male (2.23 ± 0.01), female (2.42 ± 0.01) with the mean of 2.38 ± 0.01 and in Native chicken of Mysore division of Karnataka, it was 2.92 ±0.10, 2.93 ± 0.24 and 2.93 ± 0.24, respectively by Gopinath *et al.* (2013). The higher gizzard musculature (4.9 %) observed in Miri chicken by Vijh *et al.* (2005) is because of females generally being voracious foragers to meet their requirements for egg production. The bird also consume a lot of grit material made of calcium and sand /silica to meet their calcium requirement and for effective grinding in the gizzard so that the gizzard muscles get hypertrophied and weighed more in females.

CONCLUSION

Indigenous chicken has great delicacy because of its taste and flavour and preferred more during festival season, celebration of other events in the villages and also serves as a good supply of protein to the household people in the form of meat. It has direct role in replenishing the health status of the rural people. The native chicken variety of CPPM has good carcass quality and cut-up parts on processing and it is better than other native variety available in India. Hence, this variety of CPPM chicken has to be chosen by the farmers to get more profit in terms of selling whole bird and good nutrition by consumption of meat and make it as a profitable enterprise. The native chicken variety maintained at CPPM, Hosur could be selected and used for further breeding and processing. Thus the native chicken variety fulfils the protein demand and also ensures the livelihood and nutritional security of food in India.

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