



ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(1): 422-424
© 2022 TPI
www.thepharmajournal.com
Received: 16-11-2021
Accepted: 18-12-2021

Ugale Gaurav M
M.Sc. Student, Department of
Animal Husbandry and
Dairying, Sam Higginbottom
University of Agriculture,
Technology and Sciences,
Prayagraj, Uttar Pradesh, India

Bipasha David
Assistant Professor, Department
of Animal Husbandry and
Dairying, Sam Higginbottom
University of Agriculture,
Technology and Sciences,
Prayagraj, Uttar Pradesh, India

Neeraj
Professor and Head, Department
of Animal Husbandry and
Dairying, Sam Higginbottom
University of Agriculture,
Technology and Sciences,
Prayagraj, Uttar Pradesh, India

Corresponding Author
Ugale Gaurav M
M.Sc. Student, Department of
Animal Husbandry and
Dairying, Sam Higginbottom
University of Agriculture,
Technology and Sciences,
Prayagraj, Uttar Pradesh, India

Studies on seasonal effects on embryonic mortality percentage (Dead-in-shell) and hatchability percentage of VenCobb 430Y broiler breeder of sinner block at Nasik district, Maharashtra

Ugale Gaurav M, Bipasha David and Neeraj

Abstract

The seasonal effect on hatchability and dead in shell at broiler breeder farm situated in Sinnar block of Nashik district, Maharashtra was assessed during the year 2020 to 2021 (March 2020 to February 2021). Hatchability percentage in winter season was 81.33% in summer 78.94% respectively; result showed that there was no significant difference found in hatchability percentage because there is no direct contact of outside climate and incubator climate. Early embryonic mortality were in winter season 3.51% and in summer season 3.46%, mid embryonic mortality were in winter season 3.61% and in summer season 3.77% and in late embryonic mortality 3.02% and 3.88% in winter and summer season the result showed that there was no significant difference found in dead in shell but in both the treatment there 3.02% to 3.77% dead in shell this may be the effects of other Hatchability factors.

Keywords: VenCobb 430Y, seasonal effect, hatchability, embryonic mortality percentage

Introduction

Hatchability is the major determinant of profitability in the Indian breeding farming. These parameters appear to be very important as far as parent stocks are kept to produce final hybrids. Hatchability is a complex age dependent trait. It comprises of several sub-traits which are susceptible to genetic and environmental factors arising from various sources (Wolc and Olori, 2009) [5].

The reproductive inadequacy of broiler breeders increases with age. The hatchability of their eggs decreases by 15% when broiler breeders are older than 30 weeks of age. (Leeson and Summers. 2000) [4] The egg management and incubation procedures need to be altered, as current recommended egg management and incubation procedures are not adjusted for breeder age. (Elibol and Brake 2003) [3].

Material and Methods

Selection and description of site

The study was conducted in "Om poultry farm" at village Vedzire, Sinnar Block of Nasik District, Maharashtra. The farm is located away from villages and industries area to get the optimum result and benefits in hatchery. Nasik is the place known for poultry in country after paladam of Tamil Nadu and the climatic condition is always in comfort zone. It's the success to get optimum production to Nasik farmer.

Incubation (0 to 21 days)

During the entire incubation period, hen eggs need about 21 days to be hatched. And the 21 days will separate in two parts, from day 1 to day 18 eggs will be in the incubator, and on the 18th day, eggs will be transferred to the hatcher, and stay inside the hatcher for 2-3 days until most of the chicks come out. In research study all the egg was hatched at hatchery of Om poultry farm, both the incubator and hatcher is Karamsar Poultry Equipment Company. It is well established poultry Equipment Company which provide good accuracy in hatchability. During the incubation temperature maintain in incubator is 99.5°F and in hatcher 98.5°F. Relative humidity is in incubator is 60% and in hatcher 70%, Carbon dioxide percentage is less than 0.5% and oxygen level maintain 21%. This all the physical parameters are same in both seasons during incubation. Anonymous (2019) [2].

Result and Discussion

Table 1: Distribution of Month as Replication

T.R.	Months	T.R.	Months
Winter R ₁	Sept	summer R ₁	March
Winter R ₂	Oct	summer R ₂	April
Winter R ₃	Nov	summer R ₃	May
Winter R ₄	Dec	summer R ₄	June
Winter R ₅	January	summer R ₅	July
Winter R ₆	Feb	summer R ₆	Aug

Seasonal effect on early embryonic mortality percentage of VenCobb 430Y broiler breeder

Seasonal effect on early embryonic mortality percentage of VenCobb 430Y Broiler Breeder are showed in table No. 2 In general early embryonic mortality percentage of VenCobb 430Y broiler breeder in winter season 4.61 to 1.97 percent. Early embryonic mortality percentage in winter season is highest (3.51%) than summer season (3.46%). early embryonic mortality percentage was highest in month of WR₃ (November) 4.61% and early embryonic mortality percentage was highest in month of SR₆ (August) 4.87%. early embryonic mortality percentage of VenCobb 430Y broiler breeder in summer season 89.87 to 87.29 percent. early embryonic mortality percentage was lowest in month of WR₆ (February) 1.97% and early embryonic mortality percentage was lowest in month of SR₁ (March) 2.11%. From the CRD table it is evident that the CD at 5% due to season non-significant 1.784 which showed that there is no significant difference between the season. the CD at 5% due to Replication non-significant 3.089 which showed that there is no significant difference between the replication.

Table 2: Seasonal effect on early embryonic mortality percentage of VenCobb 430Y broiler breeder

Month	Winter	Summer
R ₁	3.53	2.11
R ₂	3.83	2.63
R ₃	4.61	3.91
R ₄	3.81	3.63
R ₅	3.29.	3.63
R ₆	1.97	4.87
Mean	3.51	3.46
range	Max.	4.61
	Min.	1.97
	Result	S. Ed. (±)
Due to Repli	NS	1.118
Due to season	NS	0.645

Seasonal effect on mid embryonic mortality percentage of VenCobb 430Y broiler breeder

Seasonal effect on mid embryonic mortality percentage of VenCobb 430Y Broiler Breeder are showed in table No.3. In general mid embryonic mortality percentage of VenCobb 430Y Broiler Breeder in winter season 4.95 to 2.43 percent. Mid embryonic mortality percentage in winter season is lowest (3.61%) than summer season (3.77%). Mid embryonic mortality percentage was highest in month of WR₂ (October) 4.95% and mid embryonic mortality percentage was highest in month of SR₂ (April) 4.87%. Mid embryonic mortality percentage of VenCobb 430Y Broiler Breeder in summer season 4.87 to 2.53 percent. Mid embryonic mortality percentage was lowest in month of WR₅ (January) 2.43% and mid embryonic mortality percentage was lowest in month of SR₃ (November) 2.53%. From the CRD table it is evident that

the CD at 5% due to season significant 0.750 which showed that there is significant difference between the season. The CD at 5% due to Replication non-significant 1.299 which showed that there is no significant difference between the replication.

The result announced by Adnan *et al.*, (2017) ^[1] are in concurrence with the current investigation

Table 3: Seasonal effect on mid embryonic mortality percentage of VenCobb 430Y broiler breeder

Month	Winter	Summer
R ₁	3.85	3.91
R ₂	4.95	4.87
R ₃	2.87	2.53
R ₄	3.63	3.29
R ₅	2.43	3.87
R ₆	3.95	4.17
Mean	3.61	3.77
range	Max.	4.95
	Min.	2.43
	Result	S. Ed. (±)
Due to Repli	S	0.470
Due to season	NS	0.271

Seasonal effect on late embryonic mortality percentage of VenCobb 430Y Broiler Breeder

Seasonal effect on late embryonic mortality percentage of VenCobb 430Y Broiler Breeder is showed in table No.4. In general late embryonic mortality percentage of VenCobb 430Y Broiler Breeder in winter season 4.11 to 1.99 percent. Late embryonic mortality percentage in winter season is lowest (3.02%) than summer season (3.88%). Late embryonic mortality percentage was highest in month of WR₃ (November) 4.11% and late embryonic mortality percentage was highest in month of SR₆ (August) 4.87%. Late embryonic mortality percentage of VenCobb 430Y Broiler Breeder in summer season 4.87 to 2.94 percent. Late embryonic mortality percentage was lowest in month of WR₅ (January) 1.91% and late embryonic mortality percentage was lowest in month of SR₂ (October) 2.94%. From the CRD table it is evident that the CD at 5% due to season non-significant 1.610 which showed that there is no significant difference between the season. The CD at 5% due to Replication non-significant 2.789 which showed that there is no significant difference between the replication.

Table 4: Seasonal effect on late embryonic mortality percentage of VenCobb 430Y Broiler Breeder

Month	Winter	Summer
R ₁	3.95	3.53
R ₂	3.63	2.94
R ₃	4.11	4.11
R ₄	2.27	4.53
R ₅	1.91	3.29
R ₆	2.23	4.87
Mean	3.02	3.88
range	Max.	4.11
	Min.	1.91
	Result	S. Ed. (±)
Due to Repli	NS	1.009
Due to season	NS	0.583

Seasonal effect on hatchability percentage of VenCobb 430Y Broiler Breeder

Seasonal effect on hatchability percentage of VenCobb 430Y

Broiler Breeder is showed in table No. 5 In general hatchability percentage of VenCobb 430Y Broiler Breeder in winter season 83.86 to 80.11 percent. Hatchability percentage in winter season is highest (81.83%) than summer season (74.94%). Hatchability percentage was highest in month of WR₅ (January) 83.86% and hatchability percentage was highest in month of SR₁ (March) 81.53%. Hatchability percentage of VenCobb 430Y Broiler Breeder in summer season 81.53 to 76.11 percent. Hatchability percentage was lowest in month of WR₁ (September) 80.11% and hatchability percentage was lowest in month of SR₆ (August) 76.11%. From the CRD table it is evident that the CD at 5% due to season non-significant 3.497 which showed that there is no significant difference between the season. The CD at 5% due to Replication non-significant 6.058 which showed that there is no significant difference between the replication.

Table 5: Seasonal effect on hatchability percentage of Ven Cobb 430Y Broiler Breeder

Month	Winter	Summer	
R ₁	80.11	81.53	
R ₂	80.95	80.11	
R ₃	81.27	79.43	
R ₄	81.53	77.87	
R ₅	83.86	78.59	
R ₆	83.23	76.11	
Mean	81.83	78.94	
Range	Max.	81.53	
	Min.	76.11	
	Result	S. Ed. (±)	C.D. at 5%
Due to Repli	NS	2.192	6.058
Due to season	NS	1.265	3.497

Conclusion

The present study was summarized by the seasonal effect on dead in shell and hatchability. In general there is no significant difference in hatchability because there is no relation between the outside climate and incubator climate.

In case of dead in shell both the treatment there 3.02% to 3.77% dead germ this may be the effects of others breeder farm factors.

References

1. Adnan Y, Adnan J, Imdad HL, Abbas M. Effect of incubation duration on broiler breeder eggs hatchability and post-hatch performance. *J Anim. Health Prod*, 2017;5(4):127-131.
2. Anonymous Cobb breeder hatchery guide. 2019. <https://www.cobb-vantress.com/assets/Cobb-Files/18e609cfe7/Hatchery-Guide-Layout-R2.pdf>
3. Elibol O, Brake J. Effect of frequency of turning from three to eleven days of incubation on hatchability of broiler hatching eggs, *Poultry Science*. 2003;82:357-359.
4. Leeson S, Summers J. *Broiler Breeder Production*, University Books, Guelph, Ontario, Canada, 2000.
5. Wolc A, Olori VE. Genetics of hatchability-egg quality from the perspective of a chick. In 6th European Poultry Genetics Symposium, World Poultry Science Association, Bedlewo, Poland, 2009.