TABLE I

Showing the amount of sugars utilized, their level in the mycelium and percentage of utilization by A. tenuis *and* H. spiciferum

Organism	Sugars supplied	Amount of sugars supplied 25 ml (in mg)	Amount of sugars utilized by fungi 25 ml (in mg)	Residual sugars/ 25 ml (in mg)	Percentage of sugars utilized	Dry wt. of mycelial mat (in mg)	Wt. of glucose/ 100 mg of mycelium (in mg)	Wt. of fructose/ 100 mg of mycelium (in mg)
A. tenuis	Glucose	250	244·12	5·88	97·6	136·0	4·8	1·18
		500	455	45	91·0	189·0	2·2	1·73
	Fructose	250	230·875	19·125	92·35	125·0	4·688	11·72
		500	425·5	74·5	85·1	276·0	5·8	3·32
H. speiciferum	Glucose	250	244·12	5·88	97·6	94·0	2·83	0·38
		500	493·5	4·5	98·7	188·0	2·4	1·646
	Fructose	250	215·625	34·375	86·25	114·0	4·0	5·3
		500	440·0	60·0	88·0	265·0	2·688	6·68

not proportional to the amount of glucose utilised. In *H. spiciferum*, however, the mycelial dry weight was proportional to the amount of hexose supplied to the medium. Chauhan and Suryanarayan[1], Grover and Bansal[2] and Hasija[3] made similar observations. The rate of utilization of glucose by *A. tenuis* and *H. spiciferum* was comparatively faster than fructose.

The hexose (glucose/fructose) which was used in the medium had a comparatively higher concentration in the mycelium. Hasija and Wolf[4] while working with *Aspergillus niger* recorded similar results. However, an increase in the concentration of any particular hexose (glucose or fructose) in the medium although resulted in higher mycelial yield, yet its relative concentration in the mycelial composition declined. This may be attributed to the utilization of larger fraction of hexose sugars for metabolic activity during active phase of vegetative growth and as such their concentration in the mycelium is comparatively less.

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CHOLESTEROL ACTIVITY IN THE TESTES OF *PASSER DOMESTICUS* AND *STREPTOPELIA DECAOCTO*

THE investigations have been done on two species of birds, the house sparrow, *Passer domesticus* and the common ring dove, *Streptopelia decaocto*. The testicular histology has been studied for a year and the presence or absence of interstitial cells have been noticed.

The birds were collected throughout the year and kept in the laboratory cages. Testes were fixed in Bouin's fluid for the histological studies. Tissue

were also kept in deep-freeze for biochemical estimation of cholesterol.

Histological studies, based on the activities of the testes, show four distinct phases in the annual reproductive cycles of sparrows[1] and doves[2]. The changes in the cholesterol concentration in both the testes of sparrow and doves have been summarized in Table I.

TABLE I

Distribution of cholesterol in the testes of sparrow and dove
(mg/gm, Mean ± S.E.)

	Recrudescent Phase	Active Phase	Regressive Phase	Inactive Phase
House Sparrow	10·85±1·20 N.S.	9·18±0·92 N.S.	12·58±0·13 $P < 0·01$	11·53±0·01 N.S.
Dove	8·00±1·00 $P<0$ 01	8·31±1·62 N.S.	11·33±0·87 $P<0·05$	11·01±0·52 N.S.

N.S. = Not Significant ; $P<0·05$ = Amount Significant ; $P<0·01$ = Significant

The sparrows showed a significant increase ($P < 0·001$) in cholesterol concentration from active phase to regressive phase. There was significant decrease in cholesterol level in the inactive phase as compared with the regressive phase. During recrudescent phase, the values again dropped but the change was not significant.

During active season, the cholesterol content in the dove testis was $8·32 \pm 1·62$ mg/gm. A rapid increase was observed in regressive period, which was significant ($P < 0·05$) when compared with the active period. No significant change was observed from regressive phase to inactive phase; but the values showed significant decline ($P < 0·01$) during recrudescence phase as compared with the inactive season (Table I).

In the present study, there exists a correlation between the histological condition of the testis and the cholesterol concentration. The first correlation is the decrease in the cholesterol concentration which accompanies early onset of testicular recrudescence (January and February). A rapid decline in the cholesterol concentration is observed as the spermatogenesis is initiated during the active season. The concentration is maintained from March to June at the same level. The gonadal cholesterol undergoes a seasonal cycle in concentration with the maximum value in August and September (late phase of testitular regression). It has been observed in starlings[3] chat cholesterol rises sharply from May to June after mating is over for the year and the spermatogenesis ends temporarily. Cholesterol is lowest during the premating period at the time of the maximum spermatogenetic activity. In the present study, it may be assumed that during active season, the physiological activities reach a maximum and culminate in the breeding. This should be the time of maximum androgen production and/or utilization. The decline in cholesterol concentration should be due to an increased use of this precursor for the biosynthesis of more testicular harmones. These reports are in agreement with those of Hilton[3]. In general, cholesterol concentration is high in the small, undeveloped testis and declines rapidly when gonad development starts. Hoffman[4] has reported that this testicular cholesterol is primarily involved with the testis growth and mass rather than the spermatogenesis. It has been observed that during the inactive season the interstitial cells increase and this may be related to the high cholesterol level, as its presence has been reported in interstitial cells[5].

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