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A preliminary study on diurnal feeding pattern of Mallard (Anas platyrhynchos) in winter season.

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ABSTRACT- One of the many activities of birds that have a regular daily periodicity is the procurement of food. Multiple factors may modify the rate of food intake at a given time of the day. The meterological factors together with social interactions and reproductive status locally could all affect the diurnal pattern of food consumption.

The Mallard (Anas platyrhynchos), ancestor of all our domestic ducks, shows sexual dichromatism. The birds are largely grey above and below with glistering dark green head and neck in male while it is brown with black spots in female. They have yellowish green bill and orange legs. In wild, birds are typical surface-feeders and consume the tender vegetative parts of the plants.

The objective of the study was to evaluate the daily food consumption pattern of the bird species specially during the winter season in captivity. Feeding activity has been measured in captive birds by monitoring activity at food cups. The feeding pattern has been investigated in a strictly quantitative manner by the continuous measurement of food intake at a regular interval of 2hrs. In winter captive birds begin feeding at about the onset of civil twilight, feed almost steadily throughout the day, and stop feeding during twilight in the evening. They exhibit a feeding pattern with morning and evening maxima. Our results also suggests that the level of solar radiation seems to be directly involved with changes in the diurnal feeding pattern in captivity.

RESEARCH METHODOLOGY:

Three healthy Mallard ducks (Anas platyrhynchos) of same size(61+-cm), weight (1.25kg) and sex (male) were taken for the study. The were kept in separate protected cages in the open. These three ducks were given same quality and quantity(1kg) of food every 2hrs of interval from 6:00am to 6:00pm in a day. After every 2hrs the food consumed by each duck were measured separately and noted. At the same time atm. Temp. was also measured using digital temperature measuring device each time.

During this experiment the drinking water provided to the ducks ad libitum. The above procedure was followed for seven days.

OBSERVATION

Day 1

Time	Atm. Temp. (oC)	Duck A (Food Consumed)	Duck B (Food Consumed)	Duck C(Food Consumed)
6:00 am- 8:00 am	12	FC= 25.22g	FC= 120.10g	FC= 140.12g
8:00 am -10:00 am	14	FC= 50.02g	FC= 25.14g	FC= 50.25g
10:00 am – 12:00 am	20	FC= 25.17g	FC= 25.28g	FC= 74.91g
12:00 am – 2:00 pm	25	FC= 25.10g	FC= 25.01g	FC= 24.21g
2:00 pm – 4:00 pm	28	FC= 23.17g	FC= 100.10g	FC= 25.33g
4:00 pm – 6:00 pm	19.5	FC= 25.01g	FC= 73..27g	FC= 20.10g

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Day 2

Time	Atm. Temp. (oC)	Duck A (Food Consumed)	Duck B (Food Consumed)	Duck C (Food Consumed)
6:00 am- 8:00 am	11.5	FC = 30.15g	FC= 100.11g	FC=100.07g
8:00 am -10:00 am	16	FC= 74.33g	FC=22.14g	FC=62.35g
10:00 am – 12:00 am	21	FC= 25.33g	FC=24.17g	FC=75.18g
12:00 am – 2:00 pm	25	F= 25.11g	FC=25.16g	FC=27.20g
2:00 pm – 4:00 pm	29	FC= 23.11g	FC=98.30g	FC=24.15g
4:00 pm – 6:00 pm	25.8	FC= 20.10g	FC=50.31g	FC=18.15g

Day 3

Time	Atm. Temp. (oC)	Duck A	Duck B	Duck C
6:00 am- 8:00 am	12.5	FC=144.12g	FC=167.40g	FC= 150.23g
8:00 am -10:00 am	18	FC=00g	FC= 50.20g	FC=120.12g
10:00 am – 12:00 am	27	FC=75.13g	FC= 75.14g	FC=75.32g
12:00 am – 2:00 pm	28	FC=24.13g	FC= 25.25g	FC= 50.10g
2:00 pm – 4:00 pm	29	FC=58.01g	FC= 140.23g	FC=125.0g
4:00 pm – 6:00 pm	22	FC=40.13g	FC=100.13g	FC= 120.50g

Day 4

Time	Atm. Temp. (oC)	Duck A (Food Consumed)	Duck B (Food Consumed)	Duck C (Food Consumed)
6:00 am- 8:00 am	12.5	FC= 50.05g	FC=150.02g	FC=121.12g
8:00 am -10:00 am	14.5	FC=45.40g	FC=73.21g	FC= 72.15g
10:00 am – 12:00 am	21	FC=25.01g	FC=71.25g	FC= 42.12g
12:00 am – 2:00 pm	25	FC=24.14g	FC=200.01g	FC=21.25g
2:00 pm – 4:00 pm	29	FC=74.12g	FC=200.05g	FC=24.21g
4:00 pm – 6:00 pm	27	FC=52.05g	FC=50.12g	FC= 112.17g

Day 5

Time	Atm. Temp. (oC)	Duck A (Food Consumed)	Duck B (Food Consumed)	Duck C (Food Consumed)
6:00 am- 8:00 am	13	FC= 74.18	FC= 122.25	FC= 127.07
8:00 am -10:00 am	15	FC=50.01	FC=22.21	FC=45.25
10:00 am – 12:00 am	20	FC=74.23	FC=31.12	FC=23.25
12:00 am – 2:00 pm	24	FC=44.12	FC=23.17	FC=28.12
2:00 pm – 4:00 pm	28.5	FC=22.18	FC=23.25	FC=23.17
4:00 pm – 6:00 pm	26	FC=50.12	FC=73.12	FC=41.07

Day 6

Time	Atm. Temp. (oC)	Duck A (Food Consumed)	Duck B (Food Consumed)	Duck C(Food Consumed)
6:00 am- 8:00 am	12.5	50.12g	58.27g	74.13g
8:00 am -10:00 am	13.7	72.17g	27.12g	65.32g
10:00 am – 12:00 am	21	22.18	21.23g	70/15g
12:00 am – 2:00 pm	26.5	24.12g	23.13g	21.31g

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2:00 pm – 4:00 pm	29	22.17g	82.11g	24.31g
4:00 pm – 6:00 pm	25.6	18.12g	50.41g	22.17g

Day 7

Time	Atm. Temp. (oC)	Duck A(Food Consumed)	Duck B (Food Consumed)	Duck C(Food Consumed)
6:00 am- 8:00 am	11.2	67.22g	57.40g	150.02g
8:00 am -10:00 am	13.5	50.32g	27.01g	51.12g
10:00 am – 12:00 am	19.8	22.17g	23.11g	74.25g
12:00 am – 2:00 pm	26.5	20.12g	18.17g	21.01g
2:00 pm – 4:00 pm	29.5	22.13g	100.12g	22.71g
4:00 pm – 6:00 pm	26	20.17g	30.15g	18.01g

RESULT

Average food consumption in 7 days and Ave. Temp.

Time	Ave. food consumed in 7 days	Ave. Temp. (0C)	Remarks
6:00 am- 8:00 am	98.87g	12.2	Highest consumption
8:00 am -10:00 am	50.28g	15	
10:00 am – 12:00 am	44.14g	21.4	
12:00 am – 2:00 pm	34.28g	25.7	Lowest consumption
2:00 pm – 4:00 pm	59.90g	28.9	
4:00 pm – 6:00 pm	47.88g	24.6	

Bar diagram showing variation in FC pattern with atm.Temp.

CONCLUSION

From the result it is clear that the food consumption pattern of Mallard in captivity varies with the level of solar radiation. Food consumption is maximum at morning when atm. Temp. is low again it shows low consumption when atm. Temp. is high.

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