SUMMARY

TAXONOMY:

- Streamline sagittiform body clouration varies between grey, black and brown with several white and brown strips present at the belly portion.
- Head length is 26.75±5% of total length of the fish.
- Eye diameter is approximately 1.5 part of inter-orbital length.
- Vertebrae varies from 29-31 and vertebral spines varies from 43-50.
- Fin formula : D. IV-VII/5-8; P. 11-13; V. I/5; A. IV-V/23-28; C. 14-16
- Vascular labyrinth organ which is the modification of first gill arch and 3 pairs of gill arch present as respiratory organ.
- Presence of continuous and curved lateral line with 28-32 scales.
- 13-16 cranial teeth present in upper jaw and 12-14 cranial teeth present in lower jaw.

AGE AND GROWTH:

- Within 9-10 months of age the fish become matured.
- The maximum growth observed between 5-8 months age.
- The maximum number of fish observed within 45-60 mm (44.75%) and minimum number within 23 to 30 mm (4.5%) size range.

LENGTH-WEIGHT RELATIONSHIP:

- The observed length-weight relationship and condition factors are as follows:

Sl. No.	Group	Length-weight relationship
1.	**Combined group**	Log W = –3.79 +2.47 Log L
2.	**Ripe male**	Log W = –2.45 + 1.73 Log L
3.	**Ripe female**	Log W = –2.72 + 1.88 Log L
4.	**Seasonal changes**	
	Pre-Monsoon	Log W = -2.78 + 1.90 Log L
	b) Monsoon	Log W = -2.42 + 1.72 Log L
	c) Post Monsoon	Log W = -2.72 + 1.89 Log L
	d) Winter	Log W = -4.00 + 2.57 Log L
5.	**Different size length**	
	22-47 mm length	Log W = -5.526 + 3.522 Log L
	48-55 mm length	Log W = -3.736 + 2.469 Log L
	56-69 mm length	Log W = -3.151 + 2.120 Log L
	70-100 mm length	Log W = -1.657 + 1.328 Log L

- The condition factor and relative condition factor of male fish are little better than female fish.

- In post monsoon better physiological condition and in winter fish shows poor physiological condition.

HABITAT ECOLOGY:

- The fish usually preferred to relax under the aquatic vegetation like, *Vallesnaria* sp., *Hydrilla* sp. etc in a sole.
- They slowly move at the surface of the fish.
- The temperature range of 20±2^{0}C and 25±2^{0}C give the better survival rate, condition factor and growth of the fish.

FOOD AND FEEDING HABITS:

- Zooplankton with 31% andtiny crutacean with 27% has been observed in the gut content of the fish.
- The feed preference sequence of the fish in captivity is Mosquito larvae, Daphnia > Live Tubifex>Artemia larvae > Live Blood worm > Dry feed.
- The fish only take feed @ 1.5-2% of total body weight.
- The FCR was highest about 1.63 in the adult fish with daphnia and tubifex diet.
- RLG was noticed to vary from 0.96-2.18.
- The Gastro-somatic Index (GaSI) of the fish has been observed to become highest in winter about 2.30 and become very low in monsoon which is near about 1.68.

- The monthly values of Gastro-somatic Index (GaSI) have been observed to become high during March to May with the peak being in March. The lowest value was observed in the month of November.

REPRODUCTIVE BIOLOGY:

- Adult male are clearly identified by broad and bigger throat and 'V' shaped white colouration at dorsal side.
- Sex ratio Male1.97: Female 1
- 50% Female attain first maturity at the length of 75-85 mm and weight of 5.50-6.45g whereas male attain maturity quite earlier at 68-72mm length and 4.75-5.82g weight.
- Female ovaries are small, yellowish in colour and asymmetric bi-lobbed.
- The GSI ranges between 1.93 to 5.95 and highest peak observed in August and lowest has been observed in the month of December.
- Ova diameter of mature female varies between 590-1055 µm.
- Fecundity ranges between 350-750.
- The breeding season of the fish extend from late July to September.

CAPTIVE MATURATION, BREEDING AND LARVAL REARING:

- Feed with Tibifex and mosquito larvae gives the best gonadal maturation (GSI 6.42 and 5.55 respectively).
- Mouth breeding parental care observed in both male and female fish.

- 116-160 hatchlings come out from one female or male.
- The size of spat out larvae ranges between 3–6mm length.
- The whole breeding and hatching process takes time up to 20-25 days.
- The first food of the fry was Daphnia up to 4-5 days.
- Fry attained 25-30 mm length and 0.20-0.37 g weight with 4 months
- The fish takes 9-10 months to achieve adult size.