# Breeding and Seed Production of Rainbow Trout

Pure and healthy seed is required for the successful culture of Trout fish


**Directorate of Coldwater Fisheries Research**
**(Indian Council of Agricultural Research)**
Bhimtal -263 136, Nainital (Uttarakhand)
Phone: 05942- 247280/247279, Fax: 05942- 247693
Email: director@dcfr.res.in, Website: www.dcfr.res.in

Rainbow trout is one of the most popular candidate fish species of Coldwater aquaculture. This species requires cold, clean and highly oxygenated water for ripening of brooder, successful breeding and hatchery activities. Stripping is a process by which eggs from female fish and milt from male fish is obtained. The whole process of breeding includes, stripping of males & females, mixing of eggs and milt, incubation of eggs in trays fitted in the troughs with continuous flowing water, rearing of sac fry and swim up fry in FRP tanks. The whole process is performed in Ova house. Hatchery of the trout with flowing water system is known as Ova house, where incubation and hatching of eggs takes place. An Ova house is comprised of an indoor structure having troughs, trays, nursery tanks and rearing tanks with continuous water flow.

**Rectangular trough** - 220X50X40 cm
(to hold 10000-15000 fertilized eggs)

**Trays** - 50X30X10 cm
(Capacity - 2000-3000 eggs)

**Nursery tanks** - 2.0X0.5X0.6cm
(for raising 10000 fry)

**Rearing tanks** - 5.0X1.5X0.75cm

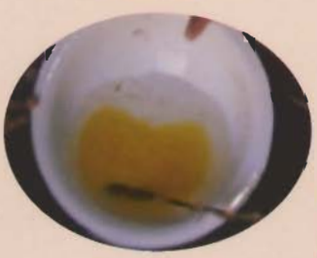
- Brooder selection: Two to three months before the breeding.
- Keep in separate tank, density 5-10 kg./m3
- Feed with normal feed of 35% protein level @ 2-3 % of total body weight, twice a day

**Maturity:** In male after 2nd year and female after completion of 3rd year.

**Breeding season:** Dec-Jan

**Mature females:** round body appearance, bloat and soft belly, and swollen and reddened vent.

**Mature male:** dark and dull in appearance, large pointed snout with hooked lower jaw and oozing of milt.



Weigh selected brooder

⇩

Do stripping of female with thumb and index finger of the right hand

⇩

Do stripping of male over the eggs

⇩

Mix the eggs & milt with feather

⇩

Keep for 1-2 minutes

⇩

Add 0.9 % NaCl

⇩

Keep for 5 minutes

⇩

Wash thoroughly

⇩

Transfer in the hatching tray

**Fertilized eggs:** demersal, lemon yellow or light green.

**Fecundity:** 1500-1800 eggs/kg body weight

**Egg size:** 4-5 mm.

**Fertilization % :** 70-90%

**Hatching period:** 40-60 days at 9-14°C

**Hatching % :** 60-80%

**Required water flow:** 1L/M for incubation of 5000 eggs or 2000 larvae at 9-14°C

- Feeding condition notably influences the fecundity.
- Larger the brooder size, larger the egg size, larger the alevin and more resistant young one.

## Benefits of Technology

Pure and healthy seed ❖ Better production
More income


***Compiled by***

Dr. N. N. Pandey, Sr. Scientist (Aquaculture)
Dr. S.K. Srivastava, Sr. Scientist
Dr. S. Chandra, Sr. Scientist
Dr. R.S. Haldar, T-6



***Published by***

Director, DCFR Bhimtal