INTRODUCTION:
Rainbow trout (Oncorhynchus mykiss) are the most widely cultivated cold freshwater fish in the world and are cultured on every continent except Antarctica, with 2008 global production estimated at 576,289 metric tons and valued at $2.39 billion. The trout sector has to a large extent pioneered aquaculture development in South Africa, and trout is currently the most commonly grown freshwater fish species in the region.

The Jonkershoek Hatchery is situated in the Jonkershoek Valley, just southeast of Stellenbosch (Western Cape) and on land occupied by Cape Nature. This hatchery (1893) has been primarily active in the production of trout for more than a century and although the focus has shifted to the production of trout by the provincial authorities (Cape Nature and others previously) for the augmentation of sports fisheries, the University of Stellenbosch today is doing research there and keeps the facilities active in the production of trout fingerlings for stocking.

BROODSTOCK CONDITIONING:
After selection, the broodstock is kept in ponds for conditioning. This is done 8-9 months before spawning. The diet caters for the changing nutritional requirements during maturation, incorporating high levels of protein and pigments such as astaxanthin which may be necessary for egg development. Stocking density is kept low (1-5kg/m3), with good water quality. Trout are anaesthetized, using benzocaine or 2-phenoxi-ethanol. The handling then becomes easier, as handling of the eggs is much more difficult. Eggs are picked during the whole development stage, to prevent the occurrence and spreading of fungus. Treatment of the eggs with Chloramine-T also prevents the spreading of fungus.

Handling of the eggs for measurement may be undertaken after water hardening. The average amount of eggs per liter is 10 000 eggs. This is an important production element, because we need to know how many eggs are produced for selling and management of the trout fingerlings. The fertilization ratio of 90 – 100% is acceptable.

EGG ENUMERATION:
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FERTILIZATION TESTING:
Fertilization rates may be tested after 7 days and 12 hours. The solution of water: methanol: glacial acetic acid in the ratio 1:1:1. At 7 days we can detect the neural (white) streak. A fertilization ratio of 90 – 100% is acceptable.

CONCLUSION:
Approximately 500 000 trout ova are hatched out in Jonkershoek during the rainfall season every year. The Jonkershoek Trout Hatchery is a working monument to the aquaculture industry in South Africa today as well as a significant monument to the country’s steadily growing fly fishing community being the origin of most of this country’s trout stocks. It has the potential to provide a supply stock of fish to many trout-grow-out projects that are set to see hundreds of previously jobless people on their way to financial stability. This is a monument of major historical significance with a lot of potential to support the future trout farming development in the region.