

Lecture 10



Fish Husbandry

Fish husbandry



❧ Passion and Dedication

- ❧ Most important qualities of a good farmer
- ❧ You have to love what you do
- ❧ You must love the fish you farm
 - ❧ Wake-up at 2am to fix a problem – Often
- ❧ Fish don't take holidays....
- ❧ If you don't look after them
 - ❧ They will not grow
 - ❧ They will die!



Fish husbandry



❧ Discipline

❧ Routine

- ❧ It is good to make checklists
 - ❧ Plan and Perform the particular tasks required
 - ❧ Hourly – Feeding
 - ❧ Daily – Water Quality, Feeding, cleaning
 - ❧ Weekly – Reporting, harvesting and packing
 - ❧ Monthly – Cleaning and maintenance
- ❧ Spend time with the fish....
 - ❧ You should get to know there behaviour
 - ❧ Early detection of potential problems

Tilapia Growth and Feeding Rates

Month	Start Weight (g)	End Weight (g)	Growth Rate g/day	Feeding Rate (% weight)
1	1	5	0.2	15 - 10
2	5	20	0.5	10 - 7
3	20	50	1.0	7 - 4
4	50	100	1.5	4 - 3.5
5	100	165	2.0	3.5 - 2.5
6	165	250	2.5	2.5 - 1.5
7	250	350	3.0	1.5 - 1.25
8	350	475	4.0	1.25 - 1.0
9	475	625	5.0	1.0

Starting with one gram fry at month one, fingerlings would be starting at month two or three. Growth is approximate and is based on 84°F water temperature.



Fish husbandry



- ❧ Good fish husbandry = Good management
 - ❧ Daily routines become habit
 - ❧ Take pride in the farm and it's surroundings
 - ❧ Cleanliness and order
 - ❧ Love what you do!



Fish husbandry



❧ Broodstock selection

❧ Choosing the right fish

❧ Think about a bull or ram

❧ Are you going to buy the smallest one or the biggest one?

❧ What about cows, or ewes?

❧ Fish are same

❧ Generations of selective breeding = domesticated fish

❧ More adapted to culture conditions than wild fish

❧ Resistant to disease

❧ Preferred growth performance and marketability



Fish husbandry



❧ Problem?

- ❧ In South Africa the freshwater aquaculture industry is in early developmental stages
 - ❧ Lack readily available seed and broodstock
 - ❧ Current legislation is prohibitive towards preferred aquaculture species (Gift Tilapia and Pangasius)
- ❧ The solution is simple – Grow the industry!
 - ❧ This is an opportunity, not a problem...
 - ❧ You must be successful.



Fish husbandry



- ❧ Admittedly high quality broodfish and fingerlings can be hard to find and are expensive
 - ❧ However, they are available
- ❧ It is possible to begin your own population with wild fish.
 - ❧ Not just any old fish will do!!!



Fish husbandry



❧ Choosing a good origin population

- ❧ For tilapia try source wild broodstock from the Eastern Cape
 - ❧ These fish are known to grow upwards of 2kg and can tolerate temperatures as low as 10°C
 - ❧ Fish from KZN, Limpopo and Mpumalanga are less cold tolerant and do not grow as fast or as big
- ❧ Catfish populations from dams can be quite inbred
 - ❧ It is better to select from large rivers where genetic variability is higher
 - ❧ The lower Vaal and Orange River are good sites to collect broodstock
- ❧ Try collect the fish from different parts of the river system



Fish husbandry



- ❧ Carp and Trout both have well developed industries within South Africa and good quality broodstock and fingerlings are available
- ❧ The Tilapia industry has also improved in recent years and good quality sex-reversed fingerlings can be found
- ❧ Speak to your local fisheries and aquaculture extension officer for assistance.



Fish husbandry



- ✧ Making the decision to breed your own fingerlings should be carefully considered
 - ✧ It is better sometimes to specialise in either breeding or growing



Fish husbandry



❧ Keeping Broodstock

- ❧ Broodstock require high-quality care year round in order to provide high quality eggs and sperm
- ❧ It is best to keep males and females separately in order to prevent unwanted spawning
- ❧ Broodstock fish are kept at low densities
- ❧ Fed a very high quality diet
- ❧ Very high water quality consistently maintained



Fish husbandry



- Typically fish will breed as a result of some environmental cue
 - ❧ Spawning is seasonal
 - ❧ Temperature increase, rain, day length
- For year round spawning, temperature and even light cycles may need to be manipulated
 - ❧ Keep the temperature in the preferred range for spawning can “trick” fish into breeding repeatedly throughout the year
 - ❧ Gonadotropins can be used to stimulate ovulation and induce spawning



Fish husbandry



- ❧ Good broodfish can be kept for 2-4 years
 - ❧ It is important to continually bring in new genetics to your population
 - ❧ Young fish typically produce better quality eggs and sperm than older fish
 - ❧ Your broodstock are precious
 - ❧ Make sure they are protected from predators
 - ❧ Birds and otters can become a farmers worst enemy
 - ❧ Leguaans and frogs can also become a problem
 - ❧ A small wall and bird net is a good start

