Per os

This is a common delivery method for antibiotics on large farms for ease of medicating large numbers of fish and also minimises handling stress. However, the delivery of the correct doses to each individual fish is difficult (sick fish are usually inappetent and it is these that should actually be receiving the medication). Medication is either sprayed onto the food, impregnated into the food, or prepared with food coated with medicated gelatin, agar or oil. Depending on the drug, this medicated food may sometimes be less palatable. It is thus recommended to reduce the amount of food fed per day by 25-50%.

Dosages are based on the assumption that fish eat 1-2% of the body weight per day. The total body weights or biomass of the tank can be estimated by multiplying the average weight of the fish by the number of fish.

e.g.

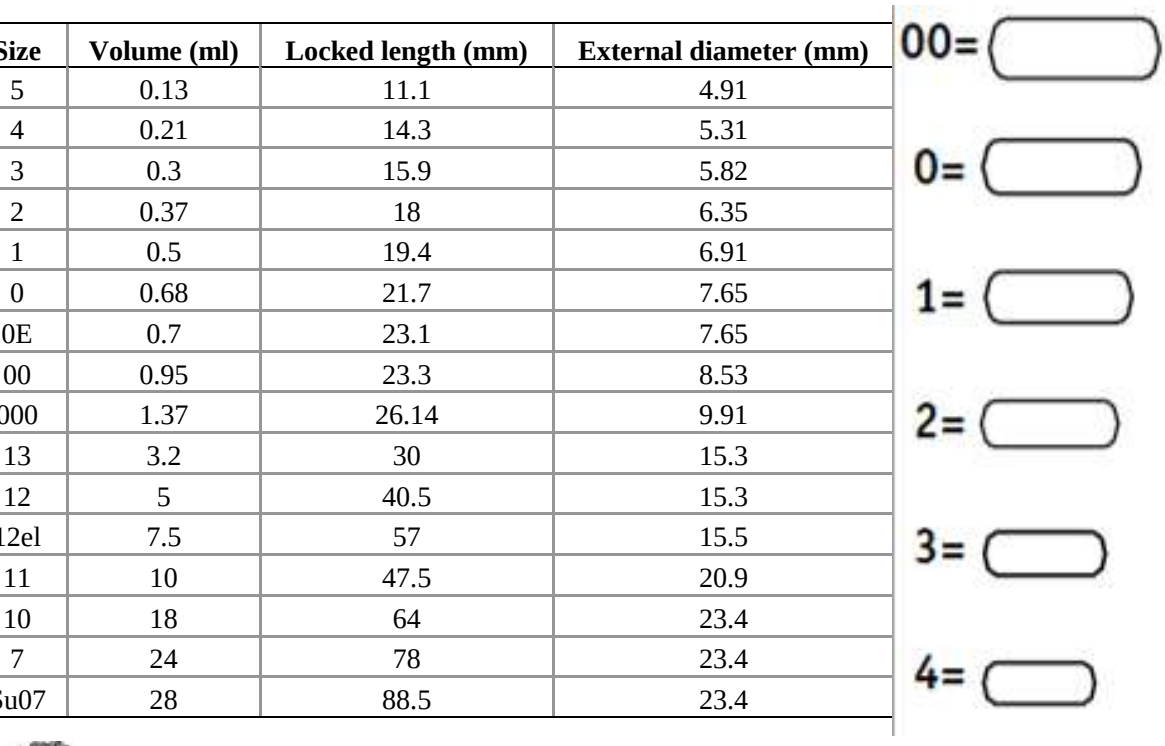
There are 300 fish in a system and each fish is 150g.
Enrofloxacin dose is 10mg/kg.
Calculating the biomass: $300 \times 0.15 = 45$kg
Amount of food eaten per day: $1 \times 45 \div 100 = 0.45$kg
Reduce this food by 25%: $0.45 \times 0.75 = 0.34$kg
Quantity of drug required: $45 \times 10 = 450$mg

*This means 450mg of enrofloxacin should be mixed into 340g of food to be fed each day.

Capsule sizes

Alternatively, medications can be presented in capsules to deliver measured doses to large individual fish. However, medicated tablets are not often available for fish. This is where compounding pharmacists come in handy. Below is a guide to capsule sizes. Once the medicines are packed into the capsules, these can then be 'hidden' inside bogue or the cavity of the fish food and then target-fed to the patient.

Size	Volume (ml)	Locked length (mm)	External diameter (mm)
5	0.13	11.1	4.91
4	0.21	14.3	5.31
3	0.3	15.9	5.82
2	0.37	18	6.35
1	0.5	19.4	6.91
0	0.68	21.7	7.65
0E	0.7	23.1	7.65
00	0.95	23.3	8.53
000	1.37	26.14	9.91
13	3.2	30	15.3
12	5	40.5	15.3
12el	7.5	57	15.5
11	10	47.5	20.9
10	18	64	23.4
7	24	78	23.4
Su07	28	88.5	23.4




Loh, R. and Landos M. (2011) ***Fish Vetting Essentials.*** Richmond Loh Publishing, Perth.

Table above sourced from http://en.wikipedia.org/wiki/Capsule_(pharmacy) & http://www.swansonvitamins.com/en_US/pdf/SizeGuideBW.pdf on 13 Dec 2010.

Gastric intubation

If fish are not eating, they can be anaesthetised and force-fed via a stomach tube. Use a 3mm outer diameter catheter and a 5ml syringe. For larger fish, use a 6mm outer diameter with a 20ml syringe (more measurements provided in the table below). Administer 1.0-1.15 ml/kg body weight. The best food to use is newly hatched, decysted Artemia nauplii because the particle size is very small (allowing easy flow through the feeding tube) and they are packed with nutrients. Otherwise, a slurry of flake food, or crushed up granules that is suspended in a small amount of water is a good alternative. Due to the high pressure needed to deliver the suspension, the tube may need to be glued to the syringe with cyanoacrylate.

French Gauge	Diameter (mm)	Diameter (inches)
3	1	0.039
4	1.35	0.053
5	1.67	0.066
6	2	0.079
7	2.3	0.092
8	2.7	0.105
9	3	0.118
10	3.3	0.131
11	3.7	0.144
12	4	0.158
13	4.3	0.17
14	4.7	0.184
15	5	0.197
16	5.3	0.21
17	5.7	0.223
18	6	0.236

Source: http://en.wikipedia.org/wiki/French_catheter_scale, accessed 17/10/2012.