Responsible use of medicines in fish farming

John Webster
Scottish Salmon Producers’ Organisation
Water covers 71% of the earth’s surface. Most usable land has already been fully exploited for food production.

Globally, fish produced through aquaculture now exceeds the total wild catch.

Both the human population and per capita consumption of fish are increasing

Aquaculture production will continue to grow as wild stocks decline and management measures are introduced.
Food producing finfish - dominated by salmon in the UK

- **Salmon** 2014
  - 96 freshwater sites producing c.40m smolts. All smolts vaccinated.
  - 257 active marine sites producing c.179k tonnes
- Rainbow trout 2014 c.15k tonnes
- Brown trout, Sea Trout & Halibut
- **Others**
  - Cleanerfish (wrasse & lumpfish)
  - Various (cyprinids, eels, etc)
  - Ornamentals
Salmon: health challenges

- **Sea lice:** *Lepeophtheirus salmonis* & *Caligus elongatus*
- Bacterial pathogens: e.g. *Aeromonas salmonicida* (Furunculosis), *Vibrio* spp (Vibriosis)
- Viral pathogens: e.g. Salmon Alpha Virus (Pancreas disease)
- Pathogenic amoeba e.g. *Paramoeba perurans* (Amoebic Gill Disease)
- Pathogenic oomycetes / “fungus”: *Saprolegnia* spp (Saprolegniasis in eggs, fry, parr, smolts)
- Freshwater protozoon ectoparasites: e.g. *Costia* spp
Salmon: medicinal treatments

- 10 licensed **vaccines** against bacterial and viral pathogens. Most injectable; some immersion; some multivalent.
- Licensed **sea lice medicines**: 1 in-feed; 4 bath treatments.
- 4 **antimicrobials** specifically licensed for use in salmon
- 2 **bath treatments** licensed for use against freshwater ectoparasites and oomycetes.
- Anaesthetics, products permitted under ATC, ATX, autogenous vaccines and products approved by VMD under SIC or STC
Supporting responsible medicine use: non-medicinal intervention – sea lice

- Area management esp. Farm Management Agreements / single generation production
- Veterinary Health Plans and Biosecurity Plans
- Site and area fallowing
- Coordinated treatment
- Sensitivity testing
- Biological control - Cleaner fish
- Barrier technology
- Information sharing – small number of large companies
Supporting responsible medicines use: good practice

The Code of Good Practice for Scottish Finfish Aquaculture

- Food safety and consumer assurance
- Fish health and biosecurity
- Managing and protecting the environment
- Fish welfare and care
- Feed and feeding

CoGP draws on RUMA guidance on

- Responsible Use of Antimicrobials in Fish Production
- Responsible Use of Vaccines and Vaccination in Fish Production
- Responsible Use of Anti-Parasitics in Aquaculture

http://thecodeofgoodpractice.co.uk/
Environmental regulation and medicine use

- SEPA: responsible for regulating the discharge of medicines to fresh and marine water via the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (‘CAR’).
- Regulation based around compliance with Environmental Quality Standards (EQS).
- Fate and behaviour of medicines modelled using dispersal models (bath medicines) and particle tracking models (in-feed medicines).
- EQS compliance can significantly restrict the nature and quantity of licensed medicines that may be used. Particular problem affecting some sea lice medicines.