

Proceedings of the Meeting of the Expert Group Organised by Aquaculture Authority, Government of India on the Use of Antibiotics, Drugs and Chemicals in Shrimp Aquaculture and Steps to be taken for their Regulation

The Aquaculture Authority convened a meeting on May 18, 2002 to discuss the modalities to regulate the use of antibiotics, drugs and chemicals in shrimp culture and make the farming practices sustainable and environment- friendly. The meeting was chaired by Justice G Ramanujam, Chairman, Aquaculture Authority.

List of participants is appended at Annexure 1.

Justice Ramanujam in his introductory remarks stressed on the need for sustainability in shrimp aquaculture. He stated that the unscientific use of antibiotics, drugs and other pharmacologically active compounds can have adverse impact on human health and also the environment. Most of the countries importing marine products from India do not permit any residue level of banned antibiotics and chemicals. Therefore, from the export angle also we must ensure that the shrimp farmers do not use antibiotics, drugs and chemicals which have the potential to harm human health and adversely impact the environment. Justice Ramanujam urged the Expert Group to discuss the issues at length and make suitable recommendations which can be submitted to the Aquaculture Authority for its consideration and approval.

The Expert Consultation was conducted in two sessions. In the forenoon session, each of the participants expressed their views on the emergent issues and on the modalities of enforcing regulation/ ban on the use of certain antibiotics, drugs and chemicals in shrimp aquaculture.

Shri R Ganapathy, Director, Marine Products Export Development Authority (MPEDA) explained the reasons and the steps followed by the Ministry of Commerce and Industry (MOCI), Government of India with regard to their notification on the maximum residue limits of antibiotics and heavy metals in the marine products exported (Notification SO 792 (E) dated August 17, 2001). As per the MOCI notification, five antibiotics *viz.*, chloramphenicol, furazolidone, neomycin, nalidixic acid, and sulphamethoxazole are banned, and no residues should be left in the animal body. According to the said notification, a certain level of residue of tetracycline, oxytetracycline, trimethoprim, and oxolinic acid; heavy metals like mercury, cadmium, arsenic, lead, tin, nickel and chromium and pesticides such as BHC, aldrin, dieldrin, endrin, and DDT can be permitted. It was informed that the MOCI fixed the residue levels based on the standards achievable in Indian conditions and for exports to the European Union, USA and Japan.

Shri Ganapathy informed that MPEDA has further compiled a list of antibiotics, drugs and other pharmacologically active compounds, which have to be banned for use in shrimp aquaculture so as to ensure the safety of domestic consumers and as also for exports. The list comprises 20 compounds, which are proposed for total ban and four antibiotics, the residues of which can be permitted in certain minimum levels (the list is enclosed at Annexure II).

Shri Ganapathy further informed that MPEDA has identified 179 drugs, chemicals and other pharmacologically active compounds presently in use in shrimp aquaculture in India. The Authority has so far conducted 536 awareness campaigns for the benefit of small farmers on the safe use of antibiotics, drugs and chemicals. MPEDA has also prepared a detailed monitoring plan for testing antibiotic and chemical residues in farmed shrimp. The monitoring plan envisages collection of samples from shrimp farms and processing units by MPEDA directly and testing them for pesticide and antibiotic residues. He informed that the European Union (EU) has issued warning to shrimp exporters as a couple of shrimp exports from India have been found to contain traces of chloramphenicol. The EU authorities have also informed that all shrimp imported from the 120 odd EU – approved Indian Shrimp Exporting Companies will be rigorously checked before being allowed into the EU. As the residues have been presently found in only few consignments, the EU has issued a red alert. However, if residue is continued to be found, EU may impose a ban on Indian shrimp exports as it has done in the case of China.

It was also informed that in another incident a couple of shipments of freshwater prawn (scampi) were detected containing nitrofurans by EU and were rejected. The source of the antibiotic residues in scampi exports has been traced to the feed (fortified with antibiotics) given in some of the farms to maintain water quality and promote the growth of scampi.

Shri G D Chandrapal, Deputy Commissioner (Fisheries), Ministry of Agriculture, Department of Animal Husbandry and Dairying (DAHD), New Delhi informed that the DAHD proposes to regulate the import of aquaculture feed by incorporating suitable provisions in the Livestock Importation Act. This will enable regulation of banned antibiotics, chemical, etc which are frequently used by the feed manufacturers for various reasons. He suggested the need for issuing executive orders to coastal States/ Union Territories for regulating the use of banned antibiotics, chemicals, etc. The participants were also of the view that as the subject of fisheries is within the jurisdiction of the States, maximum efforts have to be made by the coastal States to ensure that the banned antibiotics, etc are not used by the shrimp farmers.

Dr V Venkatesan, former Director, MPEDA and now representing the Sea Food Exporters' Association of India (SFEAI) stressed on the need to ban/ regulate the use of drugs in aquaculture and informed the steps taken by the SFEAI to check antibiotic residues in farmed shrimp before being taken for processing. He also informed that the Association has proposed to set up laboratories using their funds to regularly check the antibiotic residues in farmed shrimp.

Shri K Rengarajan, Deputy Director representing the Department of Fisheries, Government of Tamil Nadu explained the steps undertaken by their Department in controlling the use of drugs in aquaculture. He urged for more concrete measures on the regulation/ ban on indiscriminate use of antibiotics, chemicals, etc.

Mr R Balakrishnan, Deputy Director, Export Inspection Agency (EIA), Chennai informed the scheduled visit of the EU representatives during June, 2002 to ascertain the steps taken for regulating the use of antibiotics, drugs and chemicals in shrimp aquaculture. He mentioned that the EIA and MPEDA will jointly assist the visit of the EU delegation. He further elaborated EIA's role in finalising the list of 24 antibiotics, chemicals, etc

(Annexure II) which would be added to the earlier notification of the MOCI dated August 17, 2001.

Dr I S Bright Singh, Coordinator, Centre for Fish Disease Diagnosis and Management (CFDDM) informed the initiatives of the Centre in bringing up Aquaculture Medicine as a discipline to be practiced at field level and the regulations to be brought for safe use of aquaculture drugs. The Workshop on Aquaculture Medicine conducted by the CFDDM during January, 2001 paved the way for compilation of the available information on the subject. Subsequently, in association with Aquaculture Authority, a High Level Expert Committee on Aquaculture Drugs Regulation was constituted under the chairmanship of Dr Y S Yadava, Member Secretary, Aquaculture Authority and the first meeting of the Committee was held on January 18, 2002 followed by a two-day Workshop on Aquaculture Drugs. Based on the recommendations of the Committee and the Workshop, a Compendium on Aquaculture Medicine and Aquatic Animal Health Management is under preparation and will be brought out jointly by CFDDM and Aquaculture Authority. Dr Singh opined that completion of the Compendium and related activities initiated by the CFDDM will assist Aquaculture Authority and the coastal States/ Union Territories in promoting sustainable aquaculture in the country.

Shri B M Rao, Chairman and Managing Director, M/s. BMR Industries Ltd., Chennai informed the opening up of several 'aqua shops' in Andhra Pradesh and Tamil Nadu which sell antibiotics, drugs and chemicals and other medical formulations unauthorisedly for shrimp culture, disregarding the ban on several of such products. Most of the products marketed are without label and any description of their composition/ usage. He suggested that MPEDA should consider financing setting up of facilities in processing plants for testing residues in the raw material. Shri Rao further informed that under the pretext of probiotics, there are several preparations marketed which contain antibiotics. Probiotics is a big business today worth 300-400 crores and most of them are imported.

Shri D S Murty, Commissioner of Fisheries, Government of Andhra Pradesh stated that there are about 78 000 farmers in Andhra Pradesh and about 80 per cent of them have small holdings - 0.5 to 2 hectare each. As on today, 361 awareness campaigns have been organised by the State Department of Fisheries to explain the harmful effects of antibiotics in shrimp aquaculture. The State Government also organised a 'Special Week' during March 10-16, 2002 with the help of the Bay of Bengal Programme, Chennai for fish farmers which advocated good farming practices, including the regulated use of antibiotics and drugs in shrimp culture.

Shri Murty further informed that according to the Drug Controller, the veterinary grade drugs are prohibited from use in aquaculture applications. He opined that the distress harvest of shrimps should not go for either domestic marketing or exports and suggested that the marketing of seed and feed should be regulated for ensuring sustainability and environment quality. He also stressed the need for mobile laboratories to help shrimp farmers in timely health management of the farmed shrimp and for conducting tests on the spot.

After the presentations made by the experts/ members, the Expert Group in the afternoon session discussed the modalities of regulating antibiotics, chemicals and drugs and the following recommendations were made.

- (i) A list of 20 antibiotics, drugs and pharmacologically active substances and four antibiotics for which a certain level of residue is permissible in the finished product was considered by the Expert Group. It was recommended that Aquaculture Authority might consider including a provision in the licenses given to shrimp farmers prohibiting use of banned antibiotics/ pharmacologically active substances during the shrimp culture operations. This condition will enable the Aquaculture Authority to regulate the use of banned antibiotics, chemicals, etc and to cancel the license if the ban is violated by the farmers (List enclosed at Annexure III). The Expert Group also noted that this ban would in no way hamper the farming practices, as there were several safe alternative compounds available to be used by the shrimp farmers during crisis.
- (ii) As creation of awareness is vital for achieving the objectives of regulating the use of antibiotics, drugs, chemicals, etc in shrimp aquaculture, a comprehensive programme is necessary to educate the shrimp farmers and those associated with the manufacture, supply and marketing of such chemicals, etc. It was recommended that MPEDA might consider chalking out a programme and also preparing necessary awareness material in consultation with the Aquaculture Authority. This programme would be implemented with the active co-operation of the coastal States/ Union Territories.
- (iii) To assist shrimp farmers in management of animal health and water quality in farms, it was recommended to set up mobile laboratories in the coastal States/ Union Territories. It was also recommended to establish modern laboratories accessible to the processing centres for testing antibiotic residues in farmed shrimp at selected places. The Expert Group suggested that this recommendation might be considered by the Ministry of Agriculture and the coastal States/ Union Territories while preparing their schemes for the Tenth Five Year Plan.
- (iv) The Expert Group recommended amendments to the Livestock Importation Act to regulate the import of shrimp and other aquatic animal feed and suggested that the list of antibiotics and other pharmacologically active compounds approved in the meeting might be considered for inclusion in the said Act. The promulgation of a Feed and Seed Act was also recommended, the modalities of which could be discussed by the Aquaculture Authority in its next meeting.
- (v) The Ministry of Agriculture, Department of Animal Husbandry & Dairying may consider regulating the use of probiotics as they contain live organisms and probiotics of foreign origin may have the potential to introduce exotic species, the impact of which may not be known. It was also informed that guidelines for manufacturing, import and marketing of probiotics will be detailed in the proposed Compendium on Aquaculture Drugs and Aquatic Animal Health Management.
- (vi) The Ministry of Agriculture, Department of Animal Husbandry & Dairying may consider issuing Executive Orders to the State Governments on imposing effective ban on the use of drugs, chemicals imported for aquaculture. The Ministry of Agriculture may also consider requesting the Ministry of Health and Family Welfare (office of the Drug Controller) to issue directives to the drug manufacturers to label the bottles/ packets of veterinary grade drugs with '**Not for use in Shrimp Culture**'. This would help in checking the rampant use of veterinary grade drugs in shrimp aquaculture.

The meeting of the Expert Group concluded with a vote of thanks by Dr Y S Yadava, Member Secretary, Aquaculture Authority.

List of Participants

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Shri A R Singh, Deputy Drug Controller, Ministry of Health and Family Welfare could not attend the meeting and sent a letter enlisting the drugs which are banned in human medicines.

Shri M Sudarshan Swamy, Managing Director, M/s. Santir Aquatic Private Limited, Visakhapatnam and **Shri Rangachary**, Managing Director, Growell Formulations Private Limited, Hyderabad could not attend the meeting due to personal reasons.

Annexure 11

Antibiotics and other Pharmacologically Active Substances*

| S.No | Antibiotics and other Pharmacologically Active Substances | Maximum Permissible Residual Level in ppm |
|-------------|---|--|
| 1. | Chloramphenicol | Nil |
| 2. | Nitrofurans including: Furaltadone, Furazolidone, Furylfuramide, Nifuratel, Nifuroxime, Nifurprazine, Nitrofurantoin, Nitrofurazone | Nil |
| 3. | Neomycin | Nil |
| 4. | Tetracycline | 0.1 |
| 5. | Oxytetracycline | 0.1 |
| 6. | Trimethoprim | 0.05 |
| 7. | Oxolinic acid | 0.3 |
| 8. | Nalidixic acid | Nil |
| 9. | Sulphamethoxazole | Nil |
| 10. | Aristolochia spp and preparations thereof | Nil |
| 11. | Chloroform | Nil |
| 12. | Chlorpromazine | Nil |
| 13. | Colchicine | Nil |
| 14. | Dapsone | Nil |
| 15. | Dimetridazole | Nil |
| 16. | Metronidazole | Nil |
| 17. | Ronidazole | Nil |
| 18. | Ipronidazole | Nil |
| 19. | Other nitroimidazoles | Nil |
| 20. | Clenbuterol | Nil |
| 21. | Diethylstilbestrol (DES) | Nil |
| 22. | Sulfonamide drugs (except approved Sulfadimethoxine, Sulfabromomethazine and Sulfaethoxypyridazine) | Nil |
| 23. | Fluroquinolones | Nil |
| 24. | Glycopeptides | Nil |

** The list is proposed to be included in the amendment to the Notification SO 792 (E) dated August 17, 2001 of the Ministry of Commerce and Industries*

**List of Antibiotics and other Pharmacologically Active Substances
Proposed for Ban by the Expert Group**

| S.No | Antibiotics and other Pharmacologically Active Substances | Maximum Permissible Residual Level in ppm |
|-------------|---|--|
| 1. | Chloramphenicol | Nil |
| 2. | Nitrofurans including: Furaltadone, Furazolidone, Furylfulamide, Nifuratel, Nifuroxime, Nifurprazine, Nitrofurantoin, Nitrofurazone | Nil |
| 3. | Neomycin | Nil |
| 4. | Nalidixic acid | Nil |
| 5. | Sulphamethoxazole | Nil |
| 6. | Aristolochia spp and preparations thereof | Nil |
| 7. | Chloroform | Nil |
| 8. | Chlorpromazine | Nil |
| 9. | Colchicine | Nil |
| 10. | Dapsone | Nil |
| 11. | Dimetridazole | Nil |
| 12. | Metronidazole | Nil |
| 13. | Ronidazole | Nil |
| 14. | Ipronidazole | Nil |
| 15. | Other nitroimidazoles | Nil |
| 16. | Clenbuterol | Nil |
| 17. | Diethylstilbestrol (DES) | Nil |
| 18. | Sulfonamide drugs (except approved Sulfadimethoxine, Sulfabromomethazine and Sulfaethoxypyridazine) | Nil |
| 19. | Fluroquinolones | Nil |
| 20. | Glycopeptides | Nil |