

Book Review

Dictionary of aquaculture, by A. K. Singh & Anil Mittal (Daya Publishing House, Delhi), 1999, viii+224 pp, Hard Cover, Rs. 240/- [ISBN: 81-7035-203-7]

Compiling a dictionary on any language or any subject is an arduous task. It needs years of dedicated work, browsing through all available literature, interacting with experts, personal contact and correspondence with people associated in some way with the subject and so on. This may be the major reason why many dictionaries have not been compiled. Now a "Dictionary of Aquaculture" has been compiled by A. K. Singh and Anil Mittal and published by Daya Publishing House, Delhi.

Traditional aquaculture has been in vogue for centuries in all the coastal states of India particularly along the West Bengal, Kerala and Goa coasts. But in India, today aquaculture generally means brackish-water prawn (shrimp) farming (mostly tiger prawn *Penaeus monodon*) because in less than two decades a lot of area has been utilised for this purpose leading to huge investment and resulting in attractive returns and profits. Although the culture production of prawns has reached ~85,000 t annually, about 50,000 ha is still under traditional sector where the yield is very low.

The sudden and unorganised expansion of brackish-water prawn aquaculture was also responsible for creation of some environmental issues, diseases in cultured stock, socio-economic problems, etc. The Supreme Court of India directed the constitution of the Aquaculture Authority of India for regulating and streamlining the prawn aquaculture activities. Although considerable interest and efforts are being taken to popularise aquaculture of other species/groups such as the freshwater prawns and fin fishes, green mussels, etc. the production and returns are marginal compared to brackishwater prawn aquaculture.

As aquaculture made rapid progress throughout the world, the terminology used also increased tremendously. There has always been geographical and regional variations in the usage of terminology. It is also not uncommon to use different terminology for a particular aspect. It appears that this was the driving force for Singh and Mittal to compile the 'Dictionary

of Aquaculture' which includes more than 1800 entries. As the authors have put it rightly, "aquaculture is a multidisciplinary subject which includes agriculture, veterinary sciences, soil sciences, economics, chemistry, engineering, etc." In fact, the aquaculturists, students, researches and all those who are associated with aquaculture were eagerly looking forward to such a compilation so that the terminology used in aquaculture practices the world-over can be understood without difficulty.

The entries in 'Dictionary of Aquaculture', like any other dictionary has been arranged in alphabetical order. Of course, it is not humanly possible to check whether all terminology used in aquaculture practices are included in the dictionary. So, one can only check randomly the commonly and widely used terms. The authors, no doubt, have put in lot of effort to compile the dictionary. They have included most of the terminology which have direct or indirect relevance to aquaculture. One should compliment the authors for their painstaking effort. Therefore, there is no need to highlight the plus points of this book but is more important to point out the shortcomings which can help in improving the compilation.

Generally, it is a good compilation, particularly for freshwater aquaculture. However, many terminologies related to prawns and prawn aquaculture are missing in the compilation. It is quite surprising that the names used for the traditional aquaculture systems of the different coastal states of India do not find a place in the compilation. The reproductive organs of prawns such as 'petasma', 'thelycum', 'terminal ampoule', etc. have not been included in the dictionary. Similarly, the developmental stages such as 'protozoa' and 'zoea' should have been included when 'nauplius' was included. 'Mysis' has been described as a stage between zoea and postlarva whereas it is actually the stage after protozoa and is used as a synonym to zoea. The explanation given for 'batch culture' is not correct. It does not describe a system of rearing prawns but is associated with microalgal culture in the laboratory.

Diseases and parasites of penaeid prawns and larvae have not been adequately covered. Although a few diseases such as MBV, IHNV, IPN, etc. have

been included, the list is not complete. It was surprising that no mention of White Spot Baculo Virus (WSBV) has been made although the entire prawn cultivation in India was destroyed by this virus in 1994 and is still a major threat to this growing enterprise. Similarly, some of the protozoan ectoparasites such as *Vorticella*, *Zoothamnium*, etc. which play havoc in the hatchery did not find a place in the dictionary. The 'Cotton Wool Disease' has not been explained properly. The explanation that "it is common in tropical aquarium fish" does not give any idea about the disease to the reader. Even some common chemicals and antibiotics (e.g., oxytetracyclin, streptomycin, etc.) used in the hatchery and pond are not mentioned. When 'probiotics' was included why the widely used term 'immunostimulant' was excluded? Tables giving details of diseases of aquatic organisms, particularly those common in cultivated animals and chemicals and antibiotics used in the ponds and hatcheries could have been more reader-friendly.

While synonyms for many terminology are common in aquaculture, it should also be reflected in the compilation. For instance, a reader while referring to the word 'ecdysis' should come across the word 'moult' also because both these terminology mean the same process. This is how it is given in other dictionaries. A lot of terminology which have no relevance to aquaculture have also been included in the dictionary. For instance, fish products (fish paste, fish pie, etc.), oceanographic processes (upwelling, El Nino, etc.) equipment and instruments (XBT) do not have any relevance to aquaculture. In fact, one would have appreciated inclusion of 'Polymerase Chain Reaction (PCR)' which is being used recently as an effective tool in detecting viral and bacterial diseases in aquatic organisms.

The authors have included in the compilation a number of institutes, funding agencies and world bodies which are associated with aquaculture. For convenience and quick reference, these could have been listed in the form of tables along with addresses and their function. A list of Indian experts in aquaculture with address and area of specialisation would have been very useful. The conversion tables appended at the end of the compilation are very handy. However, the list of common fishes should have been restricted to cultivable species of the world because as such the list is not complete and there are some errors crept in. The list of 'Selected Readings' is inadequate and not up to date. The list needs revision as most of the important aquaculture books have not been listed. Illustrations of some important terminology may make the dictionary look more attractive.

As the authors admit there is scope for improvement. While revising the compilation they should seek the active interaction of different experts in the field. It appears that the inadvertent mistakes/errors and non-inclusion of some terminology, particularly related to prawn aquaculture may be due to the fact that the authors are not specialists in brackishwater prawn aquaculture. Since it is an arduous task, publication of a revised edition may take quite some time and until such time the present compilation can be used by students, researchers and aquaculturists to familiarise with the different terminology used in aquaculture practices.

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