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M.W. Fox

"Aquaculture 1983" was the title of a 5-day symposium and industry exhibit held in Washington, D.C., on January 9-13, 1983, sponsored by World Mariculture Society, Catfish Farmers of America, Fish Culture Section of the American Fisheries Society, U.S. Trout Farmers Association, Shellfish Institute of North America, and National Shellfisheries Association. While ecologists, economists, futurologists, and others have touted the virtues and potential of intensive fish and shellfish farming, this growing industry in the U.S. may become blighted by the same problems that have come to afflict agribusiness' "factory farming" of crops, livestock, and poultry.

Industry exhibits told the story—there were displays on herbicides and algicides to control the proliferation of plant life in overstocked and polluted fish ponds, and aeration systems to help alleviate pollution from fish excrement and rotting food in the water. Antibiotics such as tetracycline and sulfonamides were promoted for incorporation into feed, along with other drugs to control fish parasites and fungal infections. And a variety of autogenous bacterins (vaccines) were also marketed to help combat disease. One industry exhibitor even admitted that this was necessary because, just as in agronomy farming, the use of monocultures (raising of a single species) is ecologically unsound and creates disease problems. Another spokesman added that all these exogenous agents are necessary because the fish are crowded, and so are under stress and therefore more prone to disease. Bacterial resistance to some antibiotics has already emerged as a recognized problem.

In sum, aquaculture is now on the agribusiness treadmill of increasing dependence on technology and drugs (thereby providing a lucrative business for support industries, especially the chemical and pharmaceutical industries), in order to rectify intrinsically unsound husbandry practices. But does the U.S. really need more animal protein, at potential risk to consumer health from drug residues in fish and shellfish produced, and from antibiotic-resistant bacterial strains? Especially when aquaculture means new costs to consumers, who pay for the federal agencies that regulate chemical and drug residue levels and who thus help indirectly to subsidize chemical farming? And what of the welfare of the fish that are confined in crowded, polluted, chemical- and drug-saturated tanks and ponds? The possibility of "organic" and humane aquaculture, without overstocking and overuse of drugs, fades into improbability, as the values and economic structure of the rest of agribusiness begin to saturate this fledgling industry.

And an interesting postscript: One exhibit from the College of Veterinary Medicine, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, solicited donations to help support the University's Florida Foundation Gator Fund to develop new techniques in alligator production.

Achieving a Consensus on Dog Control Strategies: A Brief Primer

D.B. Wilkins

The welfare arguments surrounding dog ownership may not stimulate the same passionate fervor as those relating to the use of animals in experiments, factory farming, or the hunting of live animals with hounds, but nevertheless, they are matters of real concern to most welfare organizations.

The most serious problems are caused through irresponsible ownership, which leads to overbreeding and the inevitable consequence of large numbers of stray and unwanted dogs.

The symptoms of the stray-dog problem vary from country to country and area to area. In many, disease is the most important aspect, with rabies predominating. But in many Mediterranean countries, echinococcosis has been causing considerable concern. The island of Cyprus is a case in point. There, the high incidence of this disease among dogs necessitated massive destruction of all unwanted animals. (The dog control scheme carried out in Cyprus is chronicled by K. Polydorou elsewhere in this issue.) In other parts of the world, particularly the large cities of Europe and North America, the antisocial issues involving strays are important. Examples include feces fouling of pedestrian areas and sports fields and the destruction of garbage containers. The one common factor among all these variables is that the stray dog is inevitably the suffering, whether from injury, disease, food and water deprivation, neglect, or some combination of two or more of these hardships.

It is primarily for this reason that responsible welfare organizations should and do become involved in discussions over the introduction of dog control measures aimed essentially at punishing the incorrigible, irresponsible dog owner, breeder, or dealer. The difficulty to be faced is the extent to which legislative measures should go to try and solve the stray-dog problem. All too often, there will be considerable differences of opinion among welfareists themselves on this issue, particularly when there is a risk that a certain proportion of the dog-owning public will vociferously accuse them of supporting the anti-dog lobby.

However, while advocating no action at all is an easy and comfortable option in these circumstances, this is a policy that helps no one, least of all the stray dogs themselves. Conversely, there is a very real risk of being drawn into supporting a legislative measure that is being introduced to alleviate the symptoms of a problem, without any provisions for attempting to unravel and solve their underlying causes. For example, a complete prohibition of dogs and their owners from all parks and other recreational areas in a large city might solve the fouling problem in these places, but will also result in real suffering for both dogs and their owners. Legislation can, therefore, become counterproductive if it goes too far and results in disadvantages that outweigh the potential advantages.

On the other hand, there are some circumstances that may justify seemingly draconian measures on the basis that the long-term benefits to both the dogs and responsible owners are substantial and outweigh any possible short-term welfare complications.

In France, where rabies has been spreading slowly but surely across the whole country for some years, dog owners have accepted legislation that makes it obligatory in most parts of the country for those who own a dog to have it vaccinated against rabies and tattooed with a centrally registered identification number, a procedure that can be transiently