

Introduction & Objectives

The best available science clearly indicates that many aquatic animals utilized in aquaculture have the capacity to suffer. Yet, concern for their welfare has been historically excluded. Lower welfare considerations mean compromised immune systems, which can cause more disease & mortality, water and ecosystem contamination, and less resource efficiency. For this reason, aquatic animal welfare in aquaculture should be considered not only because it is morally correct but because it is more sustainable in the long run.

Methodology

After consulting global experts, five key welfare interventions were identified for aquatic animals utilized in aquaculture. The model of welfare used to examine possible interventions is based on the Five Freedoms: 1) freedom from hunger and thirst; 2) freedom from discomfort; 3) freedom from pain, injury, and disease; 4) freedom to express normal and natural behavior; and 5) freedom from fear and distress. These Freedoms are globally-recognized as the gold standard in animal welfare, encompassing both the mental and physical well-being of animals, and assure that the animals have lives worth living.

Results

Using the Five Freedoms and ample evidence from recent scientific research on aquatic animal welfare, we provide **five key welfare pillars** below for aquatic animals in aquaculture. More specific welfare parameters that are species-specific are available in our extended document available upon request.

Environmental Enrichment:

Aquatic animals should be provided with an environment that meets their species-specific ethological needs in a way that is analogous to how they would prefer to live in their ideal habitat.

Feed Composition & Feeding:

Move toward the use of alternative feed products, higher feed efficiency ratios (while maintaining good nutrition and health), and the substitution of carnivorous farmed species with herbivorous species. Provide appropriate feed amounts to all fishes on the farm.

Space Requirements & Stocking Density:

Stocking density levels appropriate for species and life stage must be maintained. Increase the total swimmable water volume per animal to reflect the species' needs.

Water Quality

Key water quality parameters—including but not limited to oxygen and carbon dioxide levels, pH, temperature, turbidity, salinity, ammonia, and nitrate—should be monitored continuously or at least once a day.

Stunning & Slaughter

All animals must be effectively stunned before slaughter. It is highly recommended to follow the World Organization for Animal Health's 'Aquatic Animal Health Code' (2010). Aquatic animals should be fully unconscious and slaughtered immediately.

Conclusion

Aquatic animal welfare considerations play a critical role in our ability to sustainably manage the health and longevity of each aquatic animal. By incorporating their welfare into sustainable aquaculture development policies, we will be much more successful in responsibly utilizing this resource.

References

<https://tinyurl.com/WelfareGuideAquaculture> (English)
<https://tinyurl.com/WelfareGuideCN> (Chinese)
Web: www.ali.fish | www.aaa.fish