

FUTURE CONSIDERATIONS FOR FEEDING BOTTLENOSE DOLPHINS (*TURSIOPS TRUNCATUS*) UNDER HUMAN CARE

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Abstract

Free-ranging bottlenose dolphins consume a wide variety of free-living, temperate-water fish, and invertebrate species. Dolphins managed under human care, however, are largely fed two species of cold-water fish: capelin and herring. Some facilities may feed other species but generally as a much smaller component of the total diet. Most species fed are commercially caught in cold-water at a particular time of year during a specific life cycle phase and are frozen and thawed prior to feeding. These differences between the free-ranging and managed dolphin diets directly impact the diets' nutrient profile.

In order to improve upon the managed dolphin diet and target a diet similar to the free-ranging one, four key factors must be considered: the availability of commercial fisheries, the nutrient profiles of individual fish/invertebrate species, specific health concerns of dolphins under human care, and the total diet nutrient profile. Many factors can affect the productivity of a given fishery, including habitat alteration, water quality and ocean temperature variability, and overfishing. Thus, relying on one, two, or even three species is not a sustainable plan for feeding marine animals under human care. It is essential to work with fish distributors to determine alternative available fisheries. The nutrient composition for those potential alternative species should then be analyzed, for more than just calories, protein, and fat, and the resulting nutrient profile assessed in light of particular health concerns for bottlenose dolphins (e.g. gastric ulcers, kidney stones, iron storage disease). If the fish or invertebrate species is deemed appropriate, its inclusion in the total diet and resulting diet nutrient profile must be assessed. Future formulation of the managed dolphin diet should target specific ranges for given key nutrients, using a wider variety of commercially available species, and, as needed, be individualized to address specific life stages or health issues.

Not all fish are created equal. Facilities must invest time and resources into generating, modifying, or updating their preventative health programs to include nutrition as a key focus. The future of feeding bottlenose dolphins, and all other marine animals under human care, takes into consideration the individual animal and its specific nutrient requirements, as well as the bigger picture of fishery sustainability.