In trout farming, the amount and suitability of feed used determines

How to feed trout

Once a high quality feed has been selected and the correct amount of feed determined, the next consideration is how to feed the fish. The best method depends on the size of the fish. Trout will begin to consume prepared diets within 7 to 10 days after hatching. At first, fry should be fed a small amount by hand eight to ten times per day until all the fish are actively feeding. A large kitchen strainer makes an excellent tool for distributing the finely ground starter feeds used for trout. After the initial feed training, an automatic feeder is most practical, with two or three hand feedings daily so that you can observe the fish.

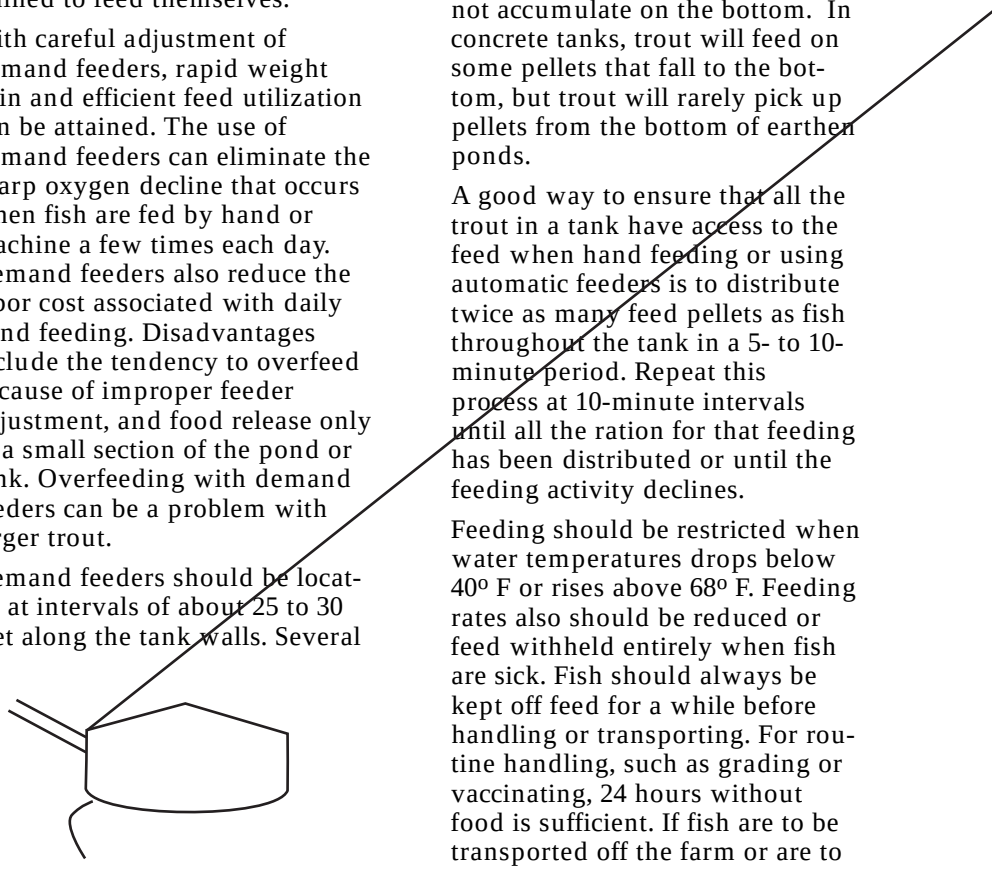
As the fry grow, the frequency of feeding can be gradually decreased to about five times per day. When fed nearly to satiation, trout will consume roughly 1 to 2 percent of their body weight in dry feed at each feeding. The feeding frequency should be adjusted to obtain the desired feeding percentage. Fry gain weight rapidly and should be sample counted weekly for the first 4 to 6 weeks. The daily feed ration should be adjusted according to their weight. Feed should be distributed over at least two-thirds of the water surface when fry are less than 2 inches long. This gives them easy access to the feed and helps to keep a uniform size within the population.

After fingerlings are moved out to tanks or earthen ponds, there are several feeding alternatives. Hand feeding each day until the fishes' appetites are suppressed usually produces the best combination of feed conversion efficiency and growth rate. However, hand feeding is labor intensive and may not be practical on a large commercial farm. Hand feeding is the best way to train fish to use demand feeders or to administer medicated feed to sick fish.

Several types of automatic and mechanical feeders are available for trout farming, including electric, water powered, and solar powered feeders with variable timers. There are feeders that use compressed air to blow feed out over the water surface at pre-set intervals, and truck or trailer mounted units that have hydraulically operated blower feeders. The type of feeder most commonly used on commercial trout farms in the south is the demand feeder (Fig. 1). It consists of a hopper for holding the feed pellets and, below the hopper opening, a movable disc attached to a pendulum extending into the water. Trout longer than 5 inches can easily be trained to feed themselves.

With careful adjustment of demand feeders, rapid weight gain and efficient feed utilization can be attained. The use of demand feeders can eliminate the sharp oxygen decline that occurs when fish are fed by hand or machine a few times each day. Demand feeders also reduce the labor cost associated with daily hand feeding. Disadvantages include the tendency to overfeed because of improper feeder adjustment, and food release only in a small section of the pond or tank. Overfeeding with demand feeders can be a problem with larger trout.

Demand feeders should be located at intervals of about 25 to 30 feet along the tank walls. Several days' feed can be loaded, but for best feeding efficiency it should not be replaced until the feeding period has passed. Adjust the feeder so that the feed is removed over the entire time for which the feeder is loaded. Even if demand feeders are used, feeding according to a feed chart is recommended for best performance.



Whether feeding by hand or with a mechanical distribution system, feed should be distributed throughout the pond and should not accumulate on the bottom. In concrete tanks, trout will feed on some pellets that fall to the bottom, but trout will rarely pick up pellets from the bottom of earthen ponds.

A good way to ensure that all the trout in a tank have access to the feed when hand feeding or using automatic feeders is to distribute twice as many feed pellets as fish throughout the tank in a 5- to 10-minute period. Repeat this process at 10-minute intervals until all the ration for that feeding has been distributed or until the feeding activity declines.

Feeding should be restricted when water temperatures drops below 40º F or rises above 68º F. Feeding rates also should be reduced or feed withheld entirely when fish are sick. Fish should always be kept off feed for a while before handling or transporting. For routine handling, such as grading or vaccinating, 24 hours without food is sufficient. If fish are to be transported off the farm or are to be processed, they should be kept off feed for at least 3 to 4 days, or longer if the water temperature is low. Trout producers do not usually use finishing diets before processing, but feed may be withheld for several weeks if the fat content of fillets needs to be reduced.

Special purpose feeding

There are specialty trout feeds for specific production goals. Phosphorus levels in some feeds have been reduced to 0.7 to 0.9 percent by weight in order to reduce the amount of phosphorus released to the environment from trout culture. Highly digestible or

"nutrient-dense" diets are available for use where reducing solid waste is a concern. Nutrient-dense diets are typically high in fish meal protein and lipids and low in carbohydrates, especially uncooked starches and fibrous materials.

There are also specialty feeds containing antibiotics (tetracycline hydrochloride or potentiated sufadimethoxine), immune stimulants (beta-glucans and other yeast derivatives or other compounds), or carotenoid pigments (canthaxanthin or astaxanthin). They are more expensive than regular diets and should be used only when appropriate. Feeds containing antibiotics should be used only after the diagnosis of a bacterial condition susceptible to treatment. Immune stimulants pigments impart a pink or red color to the flesh and do not affect fish health or growth rate. Pigmentation can be achieved in about 3 months when fish are actively growing, and in about 6 months in cold water. Other specialty diets include an enriched diet for broodfish and a high-fat diet (16 to 24 percent fat) for producing an oilier fish used for smoking or for specialty markets.