

# Hatchery Feed Experiment



OPTIMIZING PRODUCTION OF RAINBOW TROUT IN COLORADO'S HATCHERY SYSTEM

## Hatchery Feed Experiment Objectives

Feed costs are often the largest expenditure for fish producers with feed costs covering up to 60-70% of the total expense of fish production. Feed costs vary greatly among manufacturers, driven primarily by source of protein (generally fish meal, but can include other sources such as soy meal, blood meal, and feather meal) and additional ingredients included to influence growth and fish health. The objective of this study is to assess the differences in growth, condition, appearance, angler preference, and production cost per rainbow trout using four commercial trout feeds to determine if statewide annual and long-term production costs could be reduced using different commercial diets.

### Hatchery Growth and Health Evaluations

Growth, health indices, and appearance of rainbow trout are being evaluated using the basic feeds from four feed manufacturers.

Growth and fin condition, measured by the amount of fin erosion, is evaluated weekly, and feed sizes and feeding rates are changed as fish reach target weights for these metrics. In addition, health

indices are evaluated at these target weights. These indices provide an indirect measure of overall health and provide insight into the potential post-stocking survival of these fish. In general, healthier fish will result in more fish being available to catch by Colorado's anglers.



### Angler Preference for Appearance and Taste

A large portion of Colorado's rainbow trout are stocked as catchables ( $\geq 10$  inches), and are often caught and consumed shortly after being stocked. Preference for both appearance and taste was tested using catchable-size fish from the 2016 experiment. Members of the public were asked to rate the fish color, fin quality, and shape of live fish reared on the various feeds used in this experiment. In addition, two professional chefs prepared the rainbow trout for tasting (preparation styles included pan-seared and smoked fish), and tasters were asked to rate fillet color, fishiness, fish texture, and palatability of the fish. The recipes for both preparations are available for angler use, and can be found at: <https://coloradooutdoorsmag.com/2016/11/21/taste-tested-recipes-for-your-next-trout-cookout/>. The results from these hatchery feed experiments will help hatchery managers and biologists determine the best feed to efficiently produce healthy, quality rainbow trout for Colorado anglers.