

Dry Pellet Feeding For Rainbow Trout Tried At Klamath Hatchery

By PAULINE BROUGHTON

The experimental feeding of rainbow trout with dry pellets has been underway this past year at several game commission trout hatcheries, with extensive use starting this summer. The experiment began by feeding only a small portion of fish at each plant on the pellet diet. In that way, growth rates, cost, mortality and other important factors could be studied.

The feeding of dry fish food in pellet form proved too time consuming to Dick Evans, superintendent at the Klamath Trout Hatchery, so he decided to do something about it. The result of his brain wave is a Rube Goldberg feeding device, fully automatic except for daily loading of the contraption with the dry fish food pellets.

According to the feeding schedule, experimental lots of rainbow trout were to be fed small amounts of the pelleted food once

every hour as compared to twice daily feedings for other ponds of



DICK EVANS

fish receiving the customary mixed food diet. This hourly feeding of small amounts was to encourage the fish to consume all of the pellets at each feeding. As the pellets start to disintegrate after about 30 minutes in water, this was designed to eliminate food waste.

Such a tight feeding schedule found Evans, and his crew spending most of their time administering to the hungry fish to the detriment of more important work at the hatchery.

To solve the problem, Evans took a commercial fish feeder of 50 pounds capacity and attached a sheet metal funnel and a section of flexible tubing to the underside. Inside the hopper, baffles were installed which opened automatically and controlled the amount of dry food dropping through the opening. The device was mounted to a portable frame which can be moved to any desired location around the perimeter of the ponds.

A pulley arrangement and vertical shaft were mounted to the frame, with the bottom of the shaft about a foot above the water level in the ponds. To the shaft, Evans attached a flat disc about 18 inches in diameter which has four tapered radiating baffles on the top side.

Evans hooked the entire rig to a one-half horse power electric motor and a timing device which can be set to operate the feeder automatically as often as desired, also controlling amounts fed.

When the feeder is in operation, the baffles in the hopper open to allow the dry pellets to drop down the funnel and out the tubing onto the flat disc. Centrifugal force spews them out into the pond in a wide half circle about 20 feet in radius.

Evans said he got the idea for the feeder from the straw spreader on the rear of a combine harvester. So far, the device has saved many man hours which would have been devoted to hand

feeding. It takes, Evans estimates, about 20 minutes per pond to feed the pellets by hand and the feeder does the job in 10 seconds.

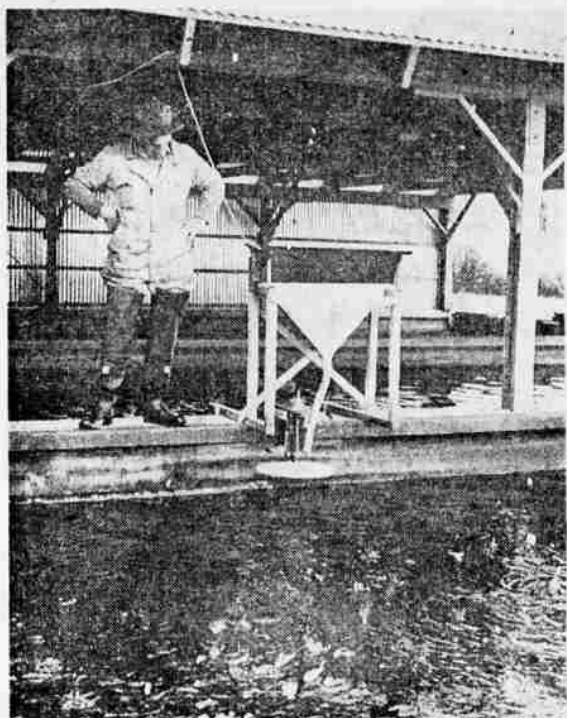
The aim is to feed pellets exclusively. However, the small fry are actually started on a normal meat and fish diet and as they grow they are introduced to pellets in increasing daily amounts. The amount of soft food is decreased proportionately. After several weeks, the entire diet is in pellet form. Small "starter" pellets are used to acquaint the fry with the dry food. As they grow, the fish are graduated to pea-size pellets for large fish of 10 inches or more.

Findings show that conversion to food pellets results in more rapid growth than the old fresh or frozen meat and fish diet. In addition, less food is required per pound of fish produced. Labor costs have been reduced one-half and food costs lowered.

The main problem encountered in the experiment is the initial introduction of the dry form of feed. Some losses occur through refusal of the fry and fingerlings to eat the dry food. After the fish become accustomed to pellets, however, they feed avidly and put on excellent growth. Salmon, cutthroat and steelhead may react differently to the new diet and are now undergoing feeding trials.

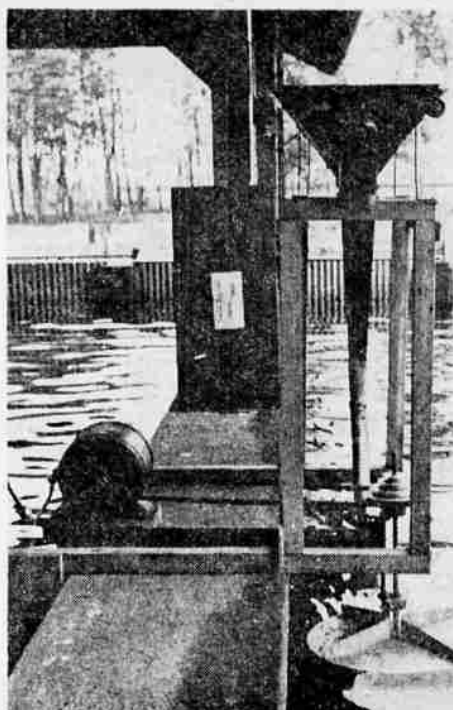
If the problem of pellet feeding can be solved for all species, the traditional hatchery fish diet probably will be abandoned throughout the state's hatchery system in favor of the newer form. Studies to date show great promise for pellet feeding resulting in faster growth at a tremendous saving in cost.

Evans has faith in the pellet feeding principle. When it is completely accepted, he plans to equip all his ponds with the automatic fish feeding device.



EXPERIMENTAL USE of an automatic feeder for dry pellets in the tanks at Klamath Trout Hatchery is being closely scrutinized by Dick Evans, hatchery superintendent, shown here with the new device he has concocted. In the picture, the circular platform onto which the pellets drop through the flexible hose from the hopper is revolving with such speed that the baffles on its surface do not show. As it spins, the centrifugal force sends the pellets a sufficient distance out into the tanks so that crowding at feeding time is avoided.

—Oregon Game Commission Photo



AUTOMATION has been added to fish feeding at Klamath Trout Hatchery through the ingenuity of Dick Evans, hatchery superintendent. This close-up photograph of the converted commercial fish feeder shows the one-half horse power motor which works on a timer so that feeding is spaced at hourly intervals with the amount of feed released regulated by the hopper control. The hopper holds 50 pounds of dry pellets and feeds at the rate of one pound in 10 seconds. Cost of feeding the fish is reduced because the experimental feeder practically eliminates food waste and cuts manhours in handling.

—Oregon Game Commission Photo

Researchers On Trail Of Brush Chipping Methods Of Feeding Cattle Herds

By United Press International

The cattle industry in California is on the verge of what could be a major breakthrough in reducing cattle production and range management costs.

The whole project, however, is being slowed down by lack of a very necessary research item—money. The research is being done by the Range Management section of the State Division of Forestry, which operates on a minimum budget.

The project is twofold: First to clear the 20 million acres of California range that now has brush stands dense enough to be considered a problem, and second to provide forage for cattle after the range grasses have dried in the summer.

The proposed solution is almost too simple to be true—harvest the brush like a crop, put it into pellet form and feed it to cattle.

Tests so far show that the idea may work.

The Division of Forestry has had its honor crops of adult and juvenile lawbreakers do a double duty this summer. While clearing fire breaks they have been chipping the cleared brush into mulch.

The project was started on the north coast, especially in Mendocino County, where first tests already have proved successful. The blue blossom brush used in that area proved in laboratory nutrition tests showed that the ground brush, mixed with a little molasses, was eaten greedily by cattle and rabbits and accepted by brush that had been on feed. Sheep on grass refused it however.

Several tons of the blue blossom pellets now have been prepared and tests on two or three ranches are expected soon to see if the cattle gain weight from the brush feed.

In the Sierra, the noxious brush scotch broom is being used. Several hundred pounds of scotch broom pellets have been prepared and will be given to cattle in El Dorado and Amador counties to see if they will eat it. Scotch broom was rated in the nutrition test as high as alfalfa in protein, but the fiber content of 45 percent may be too high to make it usable for some livestock.

test is being started in Riverside. In southern California, another and San Diego counties to determine which brush is best suited for feed.

PANETTA EXPANDING

NEW YORK — George Panetta, advertising copywriter and novelist, is a busy playwright now as the result of his initial stage venture. Panetta's comedy, "Comic Strip," was hailed by critics as a major event of the off-Broadway theater season. The producer of "Comic Strip" is planning to present another Panetta script, "Poker Game," and a Broadway impresario has announced he will do "Viva Madison Avenue."

KAZAN PLANS BUSY SEASON

NEW YORK — Director Ella Kazan has lined up a bus assignment schedule for next season on Broadway. He has agreed to stage three dramatic entries. In chronological order they are "The Night Circus," by Michael V. Gazzo, "J.B.," by Archibald MacLeish, and "Sweet Bird of Youth," by Tennessee Williams. Kazan this season was mentor of the smash hit "The Dark at the Top of the Stairs."

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