INTERNATIONAL PACIFIC HALIBUT COMMISSION

Information Bulletin

P.O. Box 95009, SEATTLE, WASHINGTON 98145-2009

March 1972

INFORMATION BULLETIN NO. 1: BAIT EXPERIMENTS

Herring was the primary bait used in the halibut fishery until 1958 but was generally supplemented by other species—Pacific cod, blackcod, bullheads (sculpins), or salmon—which collectively were called "gurdy" or "shack" bait. Octopus was introduced as a halibut bait in 1958 and appeared to be so effective that within a few months most of the fishermen were using it in large quantities. Octopus was very durable, less susceptible to predation by sandfleas and crabs, and stayed on the hooks longer than other baits.

The Commission conducted bait experiments from 1961 to 1964 to evaluate the effects of octopus bait on the catch per unit effort. Commercial longline vessels set 8- to 10-skate strings of gear with alternate skates baited either entirely with (1) herring, (2) octopus, or (3) gurdy bait, or alternate hooks within skates baited with (4) herring and octopus, or (5) herring and gurdy bait. The herring and octopus were frozen and the gurdy bait was either fresh or frozen. The gurdy bait was typical of that used in the fishery. Fresh gurdy bait was mainly Pacific cod with lesser amounts of sablefish and bullheads. Purchased bait included whole salmon, salmon parts, (mainly tails), and frozen cod.

During the four-year study, over 3,000 skates of 18-foot gear were fished in Areas 3A and 3B and the Bering Sea. Other than the baiting, no changes were made in normal fishing operations. The customary grounds were fished at depths from 40 to 150 fathoms and the gear was soaked for the usual length of time. Most of the observations were made aboard the *Akutan* and the *Seattle*, but data also were collected from eight other vessels.

The results of the study differed from year to year and from vessel to vessel. In specific instances, each of the baits, or combinations thereof, produced the largest catches. The variability of the data required statistical analysis to determine whether the observed differences were significant. The results were:

1. Catches by gear baited entirely with frozen herring were generally lowest
2. Baiting entirely with octopus or gurdy bait offered little if any advantage over baiting with octopus/herring or gurdy/herring.
3. There was no significant difference between catches by gear baited entirely or partially with octopus and gear baited entirely or partially with gurdy bait. Gurdy bait was as effective as octopus at the depths and length of soak tested during the experiments.

This study was designed to test the relative effectiveness of particular baits under normal fishing operations. The durability of the bait was not compared, nor were differences of effectiveness with season, depth, or fishing ground. The results indicate that factors other than bait have an important influence on the variability of the catches. Additional analyses of the bait data are planned and the results will be published in one of the Commission's Scientific Reports.