EFFECT OF SOME MANUFACTURING CONDITIONS ON FISH PELLET QUALITY

M.K.A. Al-Juboory
Dept. of Agric. Mechanization
College of Agric/Univ.of Baghdad

B.A. Al-Shamari
Agric. Mechanization
College of Agric/Univ.of Dayala

ABSTRACT

The pellet quality can be improved by adjustment the processing conditions. The research was conducted to evaluate some factors effect pellet manufacturing conditions. The factors included: production holes diameter with two levels (7 and 4.4 mm), grinding fineness with two levels (970 and 570 micron), and meal moisture with three levels (35.6, 38.9 and 42.3%). Pellets durability, pellet expansion ratio, pellet settle velocity and pellet temperature were studied in this experiment. Acompletely randomized design with three replications was used. The Results showed that the changing in production holes from 4.4 to 7 mm gave asignificant increase in settling velocity, while both durability and temperature of pellet were significantly decreased, where as there no significant effect in pellet expansion ratio. The hole 4.4 mm recorded both higher durability (92.63%) and lower settling velocity (9.71cm/s). lower pellet temperature (39.4C) recorded with hole 7 mm. The increase of grinding fineness from 970 to 570 micron led to significant increase in pellet durability and settle velocity where as expansion ratio, and temperature recorded lower significant. The fineness 570 micron recorded higher durability (92.93%) lower expansion ratio (-1.69%) and lower temperature(40C) while the fineness 970 micron gave lower settling velocity (9.73cm/s) .The increases of meal moisture from 35.6 to 38.9 and to 42.3% caused significant increase in pellet durability, and expansion ratio, while settle velocity and pellet temperature were significant lowered. the moisture 42.3% gave higher durability (92.87%) lower settling velocity (9.79 cm/s) and lower pellet temperature (39.6C) while The moisture (35.6%) gave lower expansion ration (-1.38%) The meal moisture showed high correlation with studied parameters.