

Specific Gravity

In order to test the chicken's acceptance of pellets of increased specific gravity, a special die was constructed by means of which it was possible to fabricate reasonable facsimiles of the ordinary Larro hen size pellets. The pellets were fabricated by filling the female die partially full of Larro broiler mash and then with one stroke of the press partially compressing this. Then one No. 2 lead shot $1/8$ inch in diameter was added, a small bit of mash placed on top of this, another stroke of the press, then another shot added. The remaining portion of the mash was put into the female die and the whole squeezed into a unit pellet.

With the press used it was not possible to squeeze the pellet as firmly as is done in the factory operation. However, because of the addition of the lead shot, the specific gravity of these pellets ranged from about 2.5 to 4.3, depending on their length. Except for the fact that these pellets were square on the ends and did not have as high a gloss on the side due to the low pressures involved, they were not unlike the ordinary Larro pellets.

When the experimental pellets were offered to the hens they accepted them readily, showing no hesitation whatsoever except when, occasionally, a pellet would break and the shot would come out, the hen would investigate the shot, picking it up in the beak but always rejecting it. Otherwise they swallowed the pellets just as they do the standard Larro pellets.

It thus appears that the tolerance for increased specific gravity in the hen is well beyond any range of density attainable by compression.

Prior to the construction of this die I talked to Mr. James of the Mechanical Division with regard to the problems involved in the compression of Larro egg mash into pellets of increased density. Mr. James was of the opinion that the pellet now fabricated by the Larro mills is a fairly dense pellet and that the pressures involved are considerable already. He doubted the possibility of further compressing the pellets beyond 10 per cent. or so.

X The experiment, thus far, of course, only shows that chickens will accept pellets of increased specific gravity. We have no indication that chickens will actually eat a greater weight of such pellets. This can be tested only after fabrication of enough pellets of increased density to run feeding experiments for a period of time. With the die we now have it is not possible to attain the required pressures or volume output for this kind of test.

Surface Properties

X A number of exploratory experiments have been carried out on the surface properties of the feed in order to determine a starting point for more elaborate and better controlled experimentation. We have fed chickens pellets painted black, corn