

Cage broiler research gets off the ground

NEWARK, Del. — About ten years ago, a number of U.S. poultry research stations began to intensify their research regarding rearing broilers in cages. Also some commercial cage equipment manufacturers, suppliers of cage accessories, and some of the broiler companies themselves collaborated on the research efforts or tried to establish suitable economic systems of cage broiler production on their own.

After some early studies it was predicted that in another ten years perhaps 10 to 25 per cent of the broilers in the U.S. would be grown in some sort of a cage or modified cage system, since litter and coccidiostats would not be needed, and it looked as though labor and space could be saved.

However, researchers were quick to discover that at least two problems would have to be corrected before the U.S. broiler industry would accept the switch to cages, according to Delaware Extension poultry specialist George W. Chaloupka. Carcass quality would have to be improved and additional equipment costs would have to be brought down to acceptable levels.

Researchers have long used batteries and cages to grow poultry for nutrition and disease studies, Chaloupka notes. The birds always grew well, and were usually heavier than floor-reared birds. However, seldom had these birds been processed and scored for quality. Therefore, researchers hadn't expected all the problems they found.

It has long been known that heavy breeds grown on wire develop breast blisters. Results at the University of

Delaware show, and others have verified, that breast blisters can be reduced to acceptable levels by using plastic or rubber mats on cage bottoms, particularly with lighter weight broilers. But researchers at the Delaware Agricultural Experiment Station and elsewhere have also found alarming rates of feather follicle infection, brittle wing bones, and crooked keels. They had expected the bone problems, since spent cage layers exhibit much bone breakage in the processing plant. But the high incidence of feather follicle infection and crooked keels was unexpected. Some of the causes of carcass downgrading are correlated either with body weight or the strain of bird used.

Where do we stand today regarding cage broiler production after at least ten years of research by many people? Nearly four billion broilers will be grown in the U.S. this year. At least ten per cent of these, or 400,000,000 will be grown on Delmarva. Still only small lots of research broilers are being grown in cages in this country. The number of people active in this type of research has apparently dwindled to a handful. Most commercial equipment companies have either discontinued their studies or are not commenting on any results of their work.

In Western Europe and other areas, particularly where lighter weight broilers are desired and where there is no mandatory carcass inspection, cages are being used on a commercial basis. However, close confinement is under attack by humane societies there. Yugoslavia, Romania and Bulgaria are using cage

units in a portion of their production. The U.S.S.R. is growing broilers in some sort of a cage system, at least on an experimental basis.

Today's cage broiler researchers are still encountering the problems of ten years ago, according to Chaloupka. They now generally agree that breast blisters can be reduced considerably with plastic or rubber mats. Feather follicle infection and even crooked keels may be at least partially controlled by using specific strains of birds. Young or lighter weight birds definitely have less downgrading at the processing plant.

In the area of energy costs, Chaloupka says, increasing the number of birds in a given area saves brooding fuel through body heat buildup. However, this meat must also be removed during high environmental temperatures.

Average weights, liveability, and feed conversions are apparently not holding back cages from commercial usage.

However, cage and accessory equipment costs, particularly for the type of system being used in Germany, are too high to be considered by industry even if all the other problems could be solved.

The Delaware Cooperative Extension Service and Agricultural Equipment Station are cooperating with workers at the USDA Poultry Regional Lab in trying to lessen the bone breakage problem by varying floor space, head room, and light intensity. Chaloupka says exercise is a key to stronger bone development. Seven to eight week old broilers need cages close to 15 inches deep. Each bird needs at least .45 square feet of area and five foot candles of light intensity to be active enough for muscular and bone development. Also the total area for each unit should probably be increased.

Researchers at Maine have found deforming keels beginning at a very early age, and are examining the possibility of strain differences. Scientists at Arkansas, the Campbell Soup Company and several

others have not given up on the development of a cage system that could be used for at least a portion of our broiler production. Researchers at North Carolina State University have been evaluating a cage

(three weeks) to floor (to eight weeks) system with some success.

Cornish hen, fast food, and further processed segments of the industry might best benefit from an efficient cage system.

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