

Researchers scramble to hatch stronger eggs

WASHINGTON, D.C. — The average U.S. laying hen produced a record 243 marketable eggs last year, but the total could have been even higher — perhaps 260 per hen — if only eggs had sturdier shells.

Shell breaks are a problem and a costly one.

"First of all, breakage means a direct cash loss to producers," says USDA economist Allen Baker. However, breakage creates all kinds of other problems as well. Appearance, for example,

diverted to "breakers," and sold at a lower price for use in processed foods.

"A more serious problem — quality deterioration and possible bacterial contamination — can leave producers or processors with a carton of eggs of little or no market value," adds Baker.

The danger of breakage begins as soon as the egg leaves the hen. In fact, by some research estimates, roughly 7 percent of the nation's eggs never get out of the



the nest to the carton. Most breakage (71 percent) had already occurred during the initial transport, while the rest took place during other mechanized processes — 13 percent during

For example, one industry shipper reported 8 to 10 percent losses in transporting eggs from the processing plant to the marketplace. Why? — broken egg shells and the mess they make.

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"One broken egg in a carton can soil other eggs, causing them to be classified as 'dirties,' which reduces their market value. 'Dirties' can't be sold to consumers as edible eggs. Instead, they are

chicken house because the shells are inadequately formed or too fragile for the collection process.

Today's high volume production is largely mechanized and some researchers say this has probably

increased the breakage problem. Fragile shells aren't likely to make it through the mechanical gathering, washing, and packing process of modern assembly-line egg production operations.

Studies on breakage, completed in California during the early 1970's, indicated anywhere from 2.3 to 11.8 percent of eggs were cracked or smashed en route from

loading, washing, and drying and 16 percent during weighing, grading, and packing.

Assessments of total egg losses caused by breakage vary widely because no national figures are collected. Within the industry, however, there seems to be a consensus that losses are greater than most current estimates indicate because they don't fully account for breakage throughout the marketing chain.

Just how hard would it be to make a tougher eggshell?

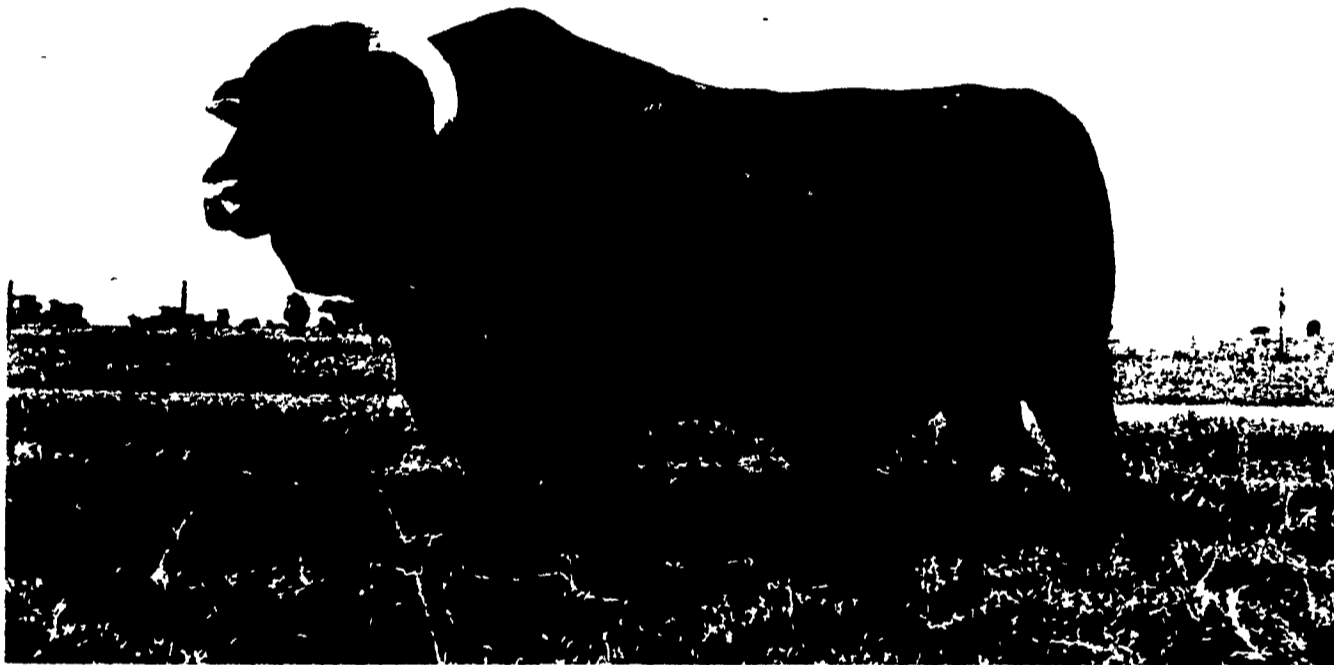
"Difficult, but we hope not impossible," admits USDA egg expert George Mountney.

Mountney coordinates a research program dealing with eggshell quality. It's part of the state agricultural experiment station programs dealing with problems of regional or national importance. Federally funded, as well as by some state sources, the research is officially called Project S-131 — "Eggshell Quality in Avian Species."

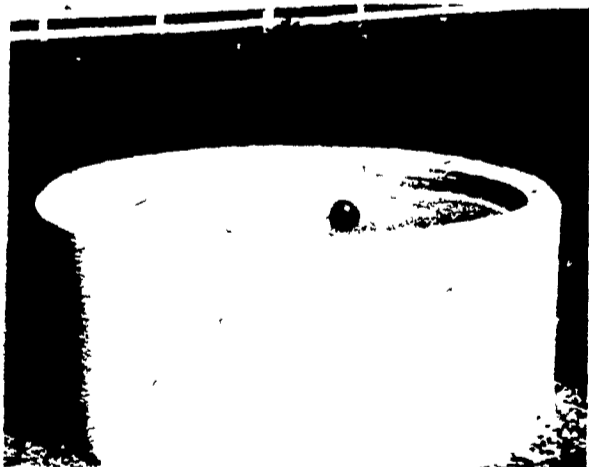
One S-131 researcher is David Roland of the poultry science department at Auburn University. Like colleagues at 14 other

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