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## Science into Practice

### A non-destructive test to predict egg cracking

Cracked and broken eggs represent significant economic losses, particularly from older flocks. A survey published in 1979 indicated that 6-8% of eggs are lost in this way. As standard tests of eggshell strength involve breaking the egg, a non-destructive test that can be used to predict losses during packing would clearly be a great step forward. Just such a test, using acoustics (sound), has been developed and tested by researchers at Glasgow Veterinary School and the Roslin Institute in Scotland and the Catholic University in Leuven, Belgium.

A total of 1660 eggs were collected from the cages of a commercial battery house. Each egg was weighed and percent damping and dynamic stiffness were measured using an acoustic crack detector. All undamaged eggs were marked and replaced at the front of the cages. They were collected, graded and packed along with other eggs and at the end of the process, the acoustic test was repeated to indicate which of

the marked eggs were still intact and which were damaged.

The results of the collaboration confirm that the dynamic stiffness test can be used to predict the probability of an egg cracking during packing, and it can do so with high precision.

The researchers point to a further application of their work: as the measurement is highly heritable, it could be used as a parameter in a commercial breeding programme to improve eggshell quality and reduce the incidence of cracked eggs over the generations.

— *Bain M.M. et al., 2006. Probability of an egg cracking during packing can be predicted using a simple non-destructive acoustic test. British Poultry Science, 47: 462-469*

### Glycerine as a feed ingredient?

Poultry scientists at the University of Arkansas, USA, have found that glycerine, a by-product of biodiesel production, can be used in broiler diets.

Professor Park Waldroup reported

their findings from a short-term study, in which they fed a diet containing up to 10% glycerine to broilers up to 16 days of age without impairing performance. This higher level caused a slight reduction in feed flow rate. A diet containing 5% glycerine supported good performance. Neither glycerine level had any adverse effects on meat quality.

US biodiesel production stands at around 350 million gallons, and this is set to double when the plants currently under construction come into production. This mushrooming growth will mean rapid increases in both the quantities and range of by-products available for the feed industry.

— *DailyIndia.com*

### Liver survey reveals high level of infections

A group of researchers from Brazil investigating the causes of liver condemnations at processing plants found that bacterial infections were often associated with the lesions. *E. coli* was isolated from 26 out of the 100 livers sampled, and *Staphylococcus* species from 24 of the samples.

Gross, microscopic and bacteriological evaluations were carried out on broiler chicken livers condemned at slaughter in two processing plants in the state of Rio Grande do Sul. Of the 100 broiler livers sampled, 90 had gross lesions and were condemned by the meat inspection service. Of these, 47 showed changes in colour, shape, size or texture; and of those showing gross lesions, 19 were pale in colour, 19 were green and 5 were yellow.

The authors concluded that the high incidence of lesions suggestive of bacterial infections was observed in the condemned livers. They did not find *Salmonella* in any of the livers.

— *Barcelos A.S. et al., 2006. Gross, microscopic and bacteriological evaluations of broiler chicken livers (Gallus gallus) condemned at slaughter. Ciência Rural, 36: 561-567*

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