



Compression Strength of Fresh Eggs

Application Report

General

The purpose of this test was to assess the ability of the In-Spec™ 2200 benchtop mechanical tester to perform strength tests on fresh eggs. This was done for demonstration purposes only.

Samples

The eggs tested were fresh New England large brown eggs.

Testing

The tests were performed on an In-Spec 2200 benchtop tester in the vertical configuration, equipped with simple compression platens. The unit included a 50 lbs. load cell, with data acquisition via HandSpring® Visor. The tests were run at a speed of approximately 1.5 inches per minute. Tests 1 through 4 were run with the egg on its 'side', whereas tests 5 and 6 were performed with the egg held manually in a vertical position (as shown in the photo).

Results

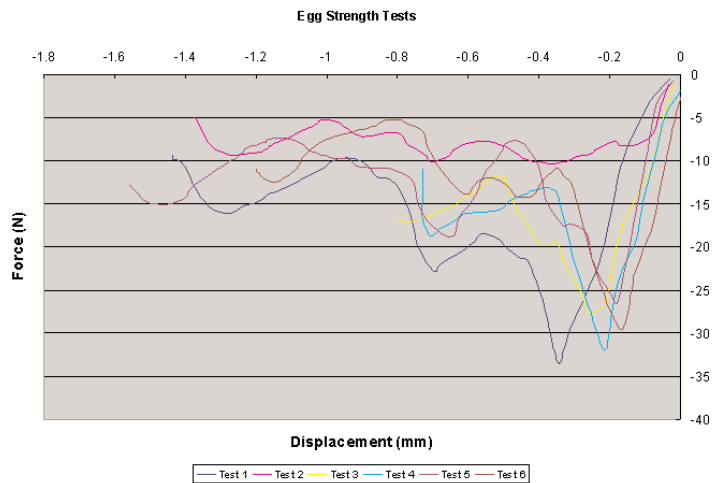
The graph shows the results of six tests. Note that there is virtually no difference between the side-on and the end-on tests. Test number 2 produced a low maximum force, and illustrates the effect of a weaker egg on the overall results.

Conclusion

With proper fixturing, the In-Spec 2200 benchtop is suitable for strength testing of fresh eggs, and can provide useful information as to the mechanical properties and toughness of the shell.



▲ Close-up view of the egg compression test



▲ Compression data transferred from the PDA and graphed in Excel



▲ For testing eggs in the field where no AC power is available, there is a handheld version of the In-Spec 2200, which would produce the same information taken in the field.