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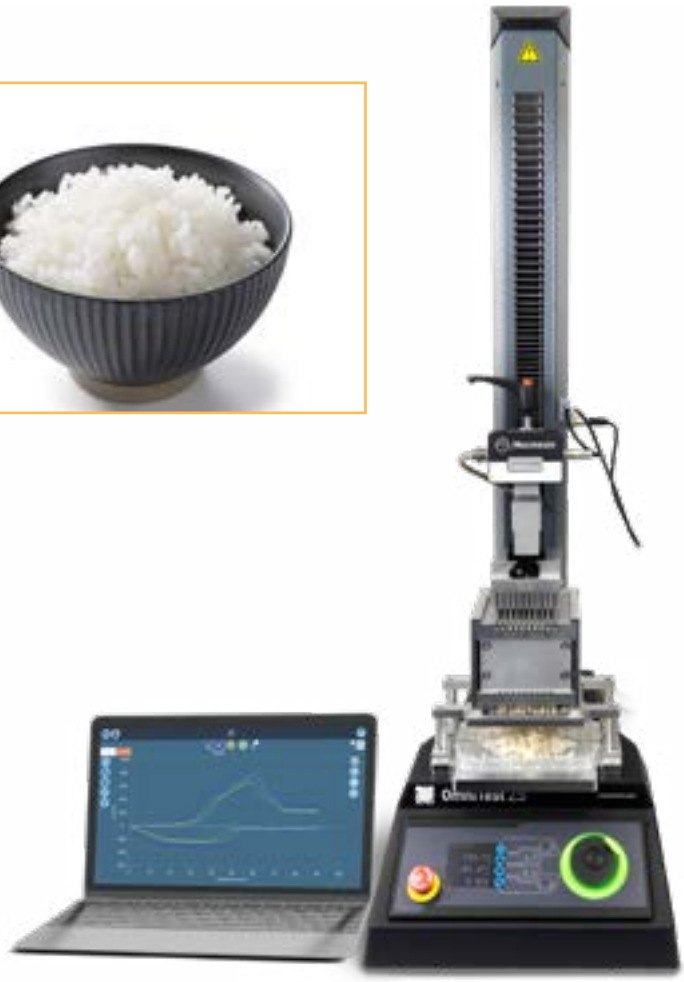
Rice Texture Analyzer

The texture of rice is vital to how the consumer perceives the quality of the product. The Rice Texture Analyzer is a bench-top, software-controlled system to evaluate the physical sensory quality properties of rice and other foods.

This system gives the rice producer a quantifiable method to benchmark and compare the texture of different rice varieties, optimize the cook profile (to indicate consumer preparation instructions) and check the consistency of supplied raw grains. It can evaluate the impact of variations in harvesting, which affects the protein and carbohydrate levels in rice. These two characteristics have a great deal of influence on the final texture when it is prepared.

Fitted with a Kramer compression-shear fixture, the system replicates the natural bite and chewing action and the results correlate to the established physical sensory texture profile attributes that define mouthfeel.

Thin-blade CS-2 Kramer Shear Cell for smaller rice grains



The Rice Texture Analyzer with VectorPro software performs both standard texture profiling and custom mechanical sensory measurements by use of interchangeable fixtures

Bulk analysis of all varieties of rice may be tested, as well as noodles and other similar foods

Specifications

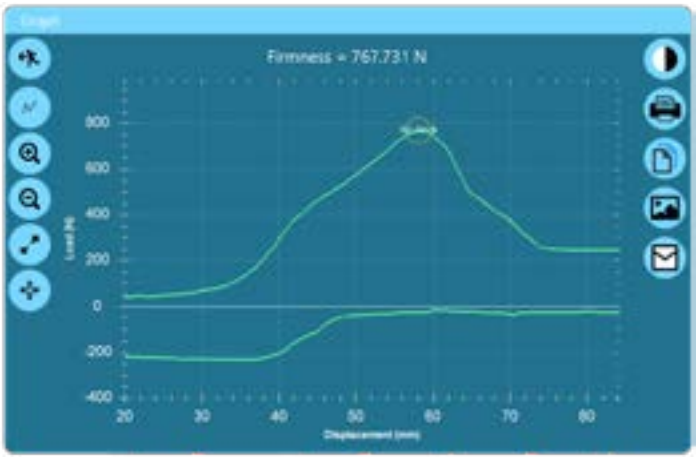
Part No.	Description
820-002.5	2.5 kN Rice Texture Analyzer with VectorPro Software
880-024	Enhanced Load Sensor ELS-S 2500N (M12 thread)
432-031/432-031-A	FTC Thin Blade Compression Cell Model CS-2 / Stainless steel & black Delrin for high acid samples
432-240/432-240-A	FTC Standard Shear Compression Cell Model CS-1 / Stainless steel & black Delrin for high acid samples

VectorPro software texture profile calculations

VectorPro software controls the Texture Analyzer to apply force to the sample, acquires the data and automatically calculates the results which correlate to the correct physical sensory qualities.
The food scientist can examine the graph of force vs displacement and assign peak, average, areas and other values to texture attribute calculations.

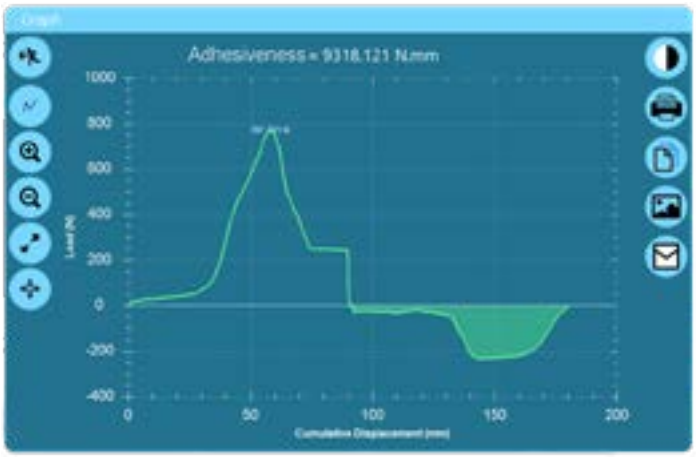
Firmness

The peak compression force measured during the complete bite cycle represents the **firmness**. This indicates if the rice has been cooked enough.



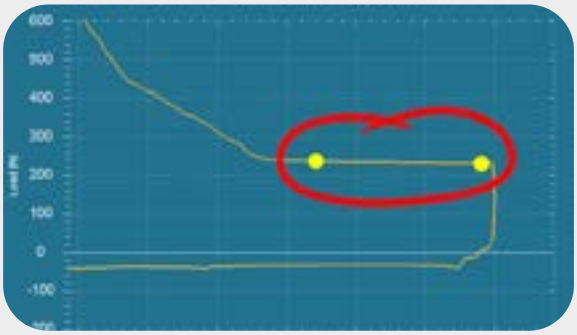
Stickiness and adhesiveness

As the shear blades return to the cycle start, the peak tension force indicates the **stickiness** in the cooked rice, correlating to the starch released during cooking. This may be desirable in some dishes. The mechanical texture attribute of **adhesiveness** is the work required to fully release the chewed material from the mouth and is calculated from the area under the curve.

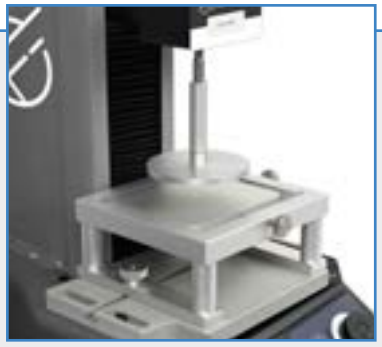


Other rice texture tests

ISO11747 is the determination of rice kernel resistance to extrusion through a perforated plate using compression. Six samples are prepared and placed in a specific fixture and compressed at 10 cm/min. The **hardness** is calculated as the mean force at the plateau after compression in the extrusion phase.



A suitable ISO11747 Rice Extrusion Cell



The machine is configuable to perform varied mechanical simulations of mouthfeel and other texture tests applicable to the rice producer's requirements, e.g., single-grain compression force

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