

Production: LEAF SPINACH

Objective: Measurement of the burst strength of spinach leaves

Type of action: Burst test

Test mode settings:

Speed	Test mode	Trigger	Target	Hold
1 mm/s	Distance (c)	5 gf	10 mm	0 sec

Accessory:

Film Penetration (SP05) rig, Platform

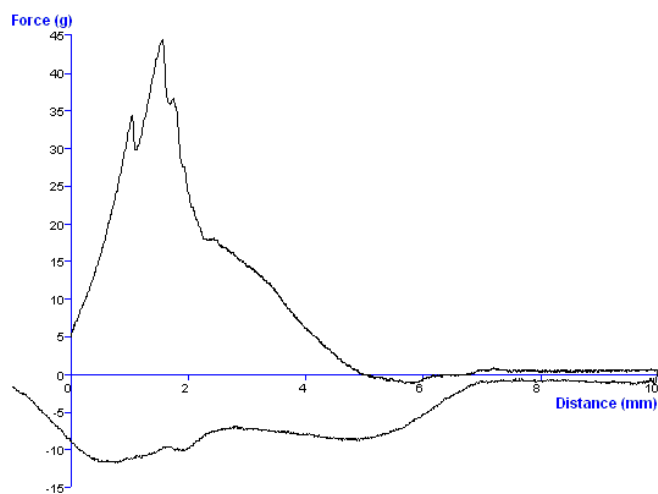
Sample Preparation:

Undamaged spinach leaves with widths less than 30 mm were selected for test. Five spinach leaves were tested to generate the results below.

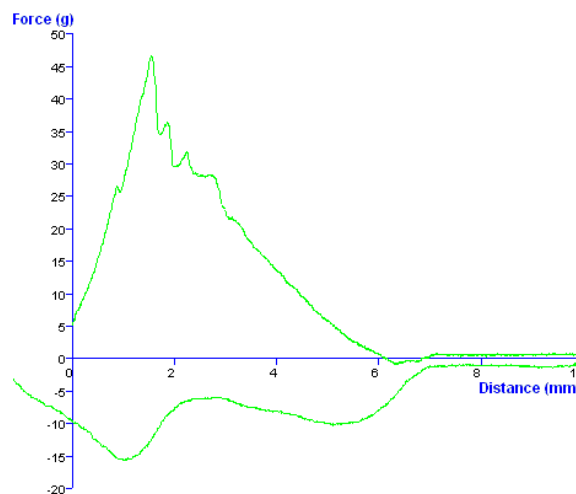
Test Set-Up:

The film support rig is fitted to the heavy duty platform and positioned loosely on the machine base. The spherical probe is connected to the load cell with a probe adaptor (AD10) and the film support rig is aligned with the spherical probe to ensure the probe can move centrally through the aperture without contacting the film support rig. When positioning is complete the heavy duty platform is fixed securely to the machine base.

Typical plots:



Graph 1. Typical Texture Analyzer Plot for a Spinach Leaf



Graph 2. Texture Analyzer Plot for Spinach Leaf

Observations:

The test begins with the probe moving at the pre-test speed. When the probe reaches the surface of the spinach leaf and the trigger force is reached the probe speed changes to the test speed and data is recorded. As the probe deflects the spinach leaf the force increases until the sample bursts. The peak force is the burst strength and the displacement is the distance to burst, which is an indication of the flexibility of the spinach leaf.

Data Analysis:☒ Max Force☒ Peak Distance**Results**

Film Sample Type	Mean Burst Strength (+/- S.D.) (g)	Mean Distance to Burst (+/- S.D.) (mm)
Spinach Leaf	52.65 +/- 7.80	1.70 +/- 0.17

Notes:

- This application study can be extended to other film/sheet samples. The target distance may need to be increased for more flexible films and a higher capacity load cell may be required for thicker, higher burst strength films.