# AOAC Official Method 974.26
# Fibrous Material in Frozen Green Beans

**Gravimetric Method**
**First Action 1974**
**Final Action 1978**

### A. Apparatus

(**a**) *Mixer*.—Overhead rotor, drink mixer type with 2 scalloped buttons 2.5 cm diameter, spaced ca 2.5 cm apart on mixer spindle. No-load rating ≥12 000 rpm. Equipped with metal mixer cup.

(**b**) *Macerating plunger rod*.—No. 7 rubber stopper attached with flat head screw, in inverted position, to end of 0.5 in. (12.7 mm) wood dowel, 25–30 cm long.

(**c**) *Fiber sieve assembly*.—Fit 85 mm diameter stainless steel or Monel screen, 30 mesh (595 µm) 32 gage, to wide mouth Mason jar closure ring. Attach to glass funnel prepared by cutting off bottom half of wide mouth Mason jar, leaving ca 12 cm side on closure side.

(**d**) *Fiber washing assembly*.—Glass tube nozzle 75 mm (3 in.) long × 3 mm (1/8 in.) id inserted into rubber hose ≤6 mm (1/4 in.) id which is connected to $H_2O$ source at controlled pressure such that assembly will deliver $H_2O$ from nozzle at 1650 ± 50 mL/min.

### B. Preparation of Sample

Place ≥250 g test sample on ≥8 in. No. 8 sieve and place under gentle stream of $H_2O$ (30–40°C) to thaw bean units and wash away any sauce. Remove any extraneous material, including stem end of any unsnipped bean unit.

Place thawed test sample in utensil with enough boiling $H_2O$ to cover. Cover utensil and boil 15 min after $H_2O$ returns to boil. Drain on No. 8 sieve, cool to room temperature under cold $H_2O$, and drain.

### C. Determination

Place ca 250 g cooked test sample on tray, break open pods, and remove and discard seeds. Collect on sieve, to permit drainage, enough pods to provide 200 g test sample. Cover accumulated pods to prevent drying.

Prepare several clean fiber sieves before starting determination. Remove each used screen from ring, brush with stiff bristle brush to loosen fibrous residue, and rinse under stream of $H_2O$. Reset in ring, dry 1 h at 100°C, cool in desiccator, and weigh to 0.2 mg (*T* g).

Transfer 200 ± 0.5 g deseeded beans to mixer cup and mash with plunger rod. Remove rod and wash adhering material into cup with 275 mL hot $H_2O$. Heat almost to bp, carefully add 40 mL 50% (w/v) NaOH solution, with stirring, and bring to boil, adding ≤1 mL capryl alcohol if necessary to control foaming. Boil 5 min, in fume hood, stirring occasionally.

Transfer cup to mixer and stir 5 min at speed ≥9000 rpm that does not cause spillage. (Control speed with variable transformer set at 80–90 V, measured with voltmeter.) Add capryl alcohol dropwise as necessary to control foaming. Sample spillage may be prevented by use of large polyethylene funnel with stem removed to pass mixer spindle and with notch at upper cup bracket so that funnel rests on rim of mixer cup.

Attach weighed screen and ring assembly to glass funnel to provide tight joint. Place on ring clamp, and pour mixture from cup slowly through screen, washing simultaneously with moving stream of $H_2O$ from washing assembly until mat is free from pulp. Transfer funnel assembly to warm $H_2O$ bath to leach remaining NaOH. Return funnel assembly to ring and place few drops phenolphthalein on mat. If red color develops, continue washing until alkaline-free.

Detach funnel and rest ring and sieve against side wall of a tray to let $H_2O$ drain. Place ring and sieve assembly in 100°C oven, providing free circulation of air through screen. Dry 3 h at 100°C; cool 15 min in desiccator containing fresh 8–20 mesh $CaCl_2$, $CaSO_4$, or silica gel. Weigh rapidly to 0.5 mg (*W* g).

$$\text{Fibrous material, \%} = (W - T) \times 100/\text{g test sample}$$

Report results to 0.001%.

Reference: *JAOAC* **57,** 701(1974).

© 2000 AOAC INTERNATIONAL

食品伙伴网http://www.foodmate.net