

## 16.5.02

### AOAC Official Method 982.31 Insect Infestation (Internal) of Wheat

#### Cracking Flotation Method

First Action 1982

Final Action 1988

#### A. Preparation of Test Portion

Mix grain by passing 6 times through Jones sampler, recombining separations before each pass. Separate slightly >50 g and weigh 50 g. Transfer weighed test portion, small amount at a time, to 5 (12.7 cm) or 8 in. (20 cm) No. 12 sieve, and with stiff bristle brush, work insects through sieve as completely as possible.

Grind screened test portion in cutting-type mill set at 0.061 in. (1.5 mm) (*see* 985.36B [*see* 16.5.03]). Dry damp or tempered grain in forced-draft oven 1 h at 70 –80°C or 2 h in oven without draft.

#### B. Isolation

Transfer cracked grain, including any residue in mill, to 2 L glass beaker containing magnetic stirring bar, 945.75B(n) (*see* 16.1.01), and mixture of 600 mL H<sub>2</sub>O + 50 mL HCl. Stir gently while boiling 15 min on hot plate.

Transfer test portion to No. 100 sieve, 945.75B(r) (*see* 16.1.01), with gentle stream of hot tap water. Wash material on sieve with very gentle stream of hot (55 –70°C) tap water until washings show no acidity when tested with blue litmus paper.

Add magnetic stirring bar, 945.75B(n) (*see* 16.1.01), to 2 L trap flask, 945.75B(h)(4) (*see* 16.1.01). Place wide-stem funnel in flask

opening and quantitatively transfer residue on sieve to flask with 40% isopropanol. Add 40% isopropanol to total volume of 800 mL.

Clamp stirring rod so stopper or wafer is above liquid in flask. (Trap flask may stand overnight at this point.) Stir gently while boiling 7 min 10 s on magnetic stirring hot plate. Remove flask from hot plate and wash down sides with minimum of 40% isopropanol and immediately add 100 mL (1 + 1) mixture Tween-80 and 40% isopropanol solution, 945.75C(x) (*see* 16.1.01), and Na<sub>4</sub>EDTA and 40% isopropanol solution, 945.75C(z) (*see* 16.1.01), slowly down rod. Hand-stir gently 1 min and let stand 3 min.

Add 50 mL mineral oil, 945.75C(p) (*see* 16.1.01), down stirring rod. Stir magnetically, 970.66B(c) (*see* 16.1.02), 5 min on cool magnetic stirrer, and let stand 3 min.

Fill flask with 40% isopropanol, added slowly down stirring rod to avoid mixing or agitation of flask contents, and let stand 20 min undisturbed. Trap off, rinsing neck of flask with 40% isopropanol, and add rinse to trappings in beaker.

Add 35 mL mineral oil to flask and hand-stir 1 min. Clamp stirring rod so stopper or wafer is at midpoint of flask. Let stand 5 min, spin stirring rod to free settleings from stopper or wafer, and adjust oil level with 40% isopropanol to ca 1 cm above fully raised stopper. Let stand undisturbed 15 min. Trap off, and combine trappings in beaker. Rinse neck of flask well with isopropanol, adding rinsings to beaker. Filter trappings on ruled filter paper, rinsing beaker well with isopropanol. Examine papers at 15 , counting only whole or equivalent insects and cast skins.

Reference: *JAOAC* 64, 1408(1981).