

5.1.56

**AOAC Official Method 966.29
Thiabendazole in Feeds, Supplements,
and Premixes**

**Spectrophotometric Method
First Action 1966
Final Action 1967**

Method II

[Applicable to cattle supplements and premixes containing >1% (>10 mg/kg) thiabendazole. Principle is same as **966.28A** (see 5.1.55), except that single extraction at room temperature with 0.1M HCl is used. Not applicable to feeds, premixes, or cattle supplements containing high levels of protein.]

A. Reagents

See **966.28B** (see 5.1.55) except:

(a) *Thiabendazole working solution*.—2 g/mL. Dilute 10.0 mL thiabendazole intermediate solution, **966.28B(d)(2)** (see 5.1.55), to 250 mL with 0.1M HCl.

B. Determination

Weigh 2.000 g ground test portion into 1 L volumetric flask and add 750 mL 0.1M HCl. Add magnetic stirring bar, stopper, and mix vigorously on magnetic stirrer 1 h at room temperature. (Mechanical shaker providing vigorous agitation may be used.) Remove and rinse bar, and dilute to volume with 0.1M HCl. Mix, centrifuge, and dilute aliquots of clear extract with 0.1M HCl to concentration of 2 g thiabendazole/mL (Table **966.29**). Dilution factors, *DF*, are also given in **966.28C** (see 5.1.55), Table **966.28** (see 5.1.55).

Develop color in extracts as soon as possible after extraction. (Acid extracts of some feeds deteriorate upon standing.)

Table 966.29. Dilutions and factors

| Declaration, % (mg/kg) | Dilution | <i>DF</i> |
|------------------------|----------|-----------|
| 1.0 (10000) | 10–100 | 10 |
| 2.5 (25000) | 4.0–100 | 25 |
| 6.0 (60000) | 4.0–250 | 62.5 |

Mark series of 50 mL centrifuge tubes (10) as in **966.28C** (see 5.1.55). Add 15.0 mL 0.1M HCl to tube 1, and 15.0 mL working solution, **A(a)**, to tubes 2 and 3. Add 15.0 mL test extracts to other tubes. Then with rapid delivery pipet, add 5.0 mL freshly prepared Zn slurry as in **966.28C** (see 5.1.55). Proceed as in **966.28C** (see 5.1.55) with addition of ferric solution, observing same techniques and time precautions. Read final clear butyl alcohol extract, as above, in 1 cm cell at 605 nm.

$$\text{Thiabendazole, \%} = \frac{(A - A_0)(C)(DF)}{90(A - A_0)W}$$

$$\text{Thiabendazole, mg/kg} = \frac{(A - A_0)(C)(DF) 10^4}{90(A - A_0)W}$$

where symbols are as defined in **966.28C** (see 5.1.55).

References: *JAOAC* **47**, 235(1964); **49**, 312(1966).

CAS-148-79-8 (thiabendazole)