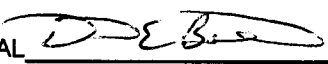
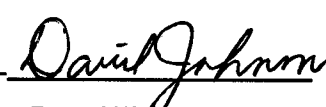


## Rotameter Calibration

Chapter 10: FIELD OPERATIONS  
AHETF-10.A.0.

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### 1.0 PURPOSE AND SCOPE

- 1.1 This Standard Operating Procedure (SOP) provides the steps to properly calibrate a rotameter used for measurement of the air flow rate through an OVS air sampling tube used to collect air monitoring samples during Agricultural Handlers Exposure Task Force (AHETF) worker exposure studies.

### 2.0 EQUIPMENT REQUIRED

- 2.1 The following equipment is needed to calibrate the rotameters:
- Personal low-volume air-sampler pump(s) (e.g., SKC, or equivalent)
  - Tygon<sup>®</sup> tubing or equivalent
  - Appropriate calibration device or primary air flow meter (e.g., BIOS DryCal<sup>®</sup>, Kurz Mass flow meter, Buck Calibrator, bubble meter and stopwatch, or equivalent)
  - Field rotameter with an appropriate measurement range

### **3.0 CALIBRATION PROCEDURE**

- 3.1 Place air-sampler pumps on chargers before each use. If the pump is fully charged proceed to 3.2.
- 3.2 Verify calibration of a rotameter once a year or if rotameter operation becomes suspect.
- 3.3 Start by calibrating five individual air-sampler pumps to five individual flow rates using a primary air flow meter (e.g. BIOS DryCal<sup>®</sup>, calibrated according to the SOP for the appropriate flowmeter). Select five flow rates that span the scale of the rotameter being calibrated.
- 3.4 Evaluate the rotameter calibration by attaching, one at a time, the five air flow calibrated air-sampler pumps from 3.3 to the rotameter. Hold the rotameter perpendicular to the ground and after the rotameter has been allowed to stabilize, a reading from the middle of the ball can be taken and recorded.
- 3.5 If any reading deviates more than  $\pm 5\%$ , the rotameter will be discarded and replaced with a new rotameter.