



## Sediment Testing of Milk:

**Purpose:** Determine the amount (in mg per gallon of milk) of unwanted insoluble material (dirt, dust, etc) that is present in raw milk. The amount of sediment found is used to grade the quality of the milk from the producer.

**Collection of milk sediment:** To make this measurement you take a fixed volume of milk (1, 2, 4 or 16 oz as determined by the QC/QA department) and filter through a screen made of lintine paper which has been mounted in the base of a large funnel (this apparatus is called a **Sediment Tester**). To hasten this filtering process you can apply a vacuum (water aspirator) to the whole assembly. The filter<sup>1</sup> is held in place by a bushing<sup>2</sup> and by the funnel being tightened into place with a ¼ turn. The bushing used to test liquid milk is a set of two plastic rings: one serves as a bottom washer and the other ring comes with a small hole (aperture) in the center. The filter / filter card is held in place between these 2 rings. The size of the aperture is determined by the volume of milk that will be tested: 1, 2, 4 or 16 oz. If you are testing powders the bushing is actually a piece of metal screen. The filter can be a simple disc of lintine paper or it can be a disc mounted in a card (**Sediment Tester Card**) that allows you to record all the necessary information for that milk sample and provides a convenient storage for your records.

**Evaluation of sediment level in milk:** The filter or filter card is removed from the Sediment Tester and after drying is compared to photographs prepared as standards by the USDA/ AMS. These photos are available in sets for the different filtering / sediment areas<sup>3</sup> with diameters of: 0.1(1 oz.); 0.14(2 oz.); 0.2(4 oz.); or 0.4 (16 oz.) inches for fine sediments and 1½ inches diameter for coarse sediment. The filter can be examined with a microscope to determine the nature of the material captured on the filter.

**Quantification of sediment level in milk:** As the sample size is reduced from 16 oz to 1 oz there is a proportionate reduction in the actual weight of the sediment. The following chart provides some equivalency figures

Filtering area diameter	Sample size in oz	Example equivalencies	Example equivalencies	Example equivalencies
1.125	128 oz. (Gallon)	0.5000 mg	1.5000 mg	2.5000 mg
0.4	16 oz	0.0625 mg	0.1875 mg	0.3125 mg
0.2	4 oz	0.0156 mg	0.0469 mg	0.0781 mg
0.14	2 oz	0.0078 mg	0.0235 mg	0.0391 mg
0.1	1 oz	0.0039 mg	0.0118 mg	0.0196 mg

For example: 0.0039 mg seen in the 1 oz sample is equivalent to 0.5 mg in a 16 oz sample

**1. Filters/ Sediment tester Cards:** provide 1 ½ inch diameter filtering area. The cards come with a clear plastic flap that can be folded over the filter for preservation and storage.

**2. Bushings:** Available in aperture sizes for testing 16 oz, 4 oz, 2 oz or 1 oz. of milk.

**3. Sediment/Filtering Area:** an area of 1 ½ inches diameter is used for quantifying coarse sediment, Areas of 0.1, 0.14, 0.2, 0.4 inches diameter are used for quantifying “fine” sediments.

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