



Method 2.5 – Bagacillo: screening

1. Rationale

This method is applicable to bagacillo and provides a rough guide in terms of the value of using a specific batch of bagacillo as a filter aid in rotary vacuum filters.

2. Principle

A sample of bagacillo is dried and transferred to a sieve. The sample is manually sieved for a fixed time. The percentage of bagacillo that falls through the sieve is rated in terms of its applicability as a filter aid in rotary vacuum filters.

3. Apparatus

- 3.1 **Light duty balance** readable to 0.1 g
- 3.2 **Moisture oven** operating at 105°C
- 3.3 **Moisture tray:** 0.25 mm pore size, 200 mm ϕ
- 3.4 **Sieve and pan:** 0.85 mm pore size, 200 mm ϕ

4. Procedure

Weigh the moisture tray accurately to 0.01 g. Add approximately 100 g of bagacillo to the tray and dry in the oven at 105°C for 1 hour. Allow the tray to cool for about 1 hour and weigh the tray accurately to 0.01 g.

Place the sieve on top of the pan. Transfer the dried bagacillo to the sieve and sieve manually for 4 minutes using a rotary motion above the catch tray. Weigh the bagacillo that is collected in the pan accurately to 0.01 g.

5. Calculations

Calculate the mass of bagacillo that passed through the sieve expressed as percentage on dried sample.

$$\text{Bagacillo in pan (\%)} = \frac{M_3}{(M_2 - M_1)} \times 100$$

where M_1 \equiv mass of moisture tray (g)
 M_2 \equiv mass of dried sample and tray (g)
 M_3 \equiv mass of bagacillo collected in the pan (g)

Report as percentage to the nearest unit.

6. Expression of results

The bagacillo is classified according to the Table below.

Table 1: Classification of bagacillo based on the screening test

| Percentage bagacillo that passed through a 0.85 mm screen | Rating |
|---|---------------------|
| 90 | Excellent |
| 85 | Satisfactory |
| 80 | Minimum requirement |

7. Example

| | | |
|--|---|---------|
| mass of moisture tray | = | 350.2 g |
| mass of dried sample and tray | = | 401.8 g |
| mass of bagacillo collected in the pan | = | 46.4 g |

$$\begin{aligned} \text{Bagacillo} &= \frac{46.4}{(401.8 - 350.2)} \times 100 \\ &= 89.92\% \end{aligned}$$

Report as 90%, rating is Excellent

8. References

SASTA (1985). *Laboratory Manual for South African Sugar Factories*. 3rd Edition: 242 - 243.