



Method 11.4 – Miscellaneous: tops and trash in whole stick cane

1. Rationale

The method is applicable to whole stick and determines the percentage of tops and trash in a sample. The accuracy of a single test is subject to limitations particularly when consignments are not homogenous and after rain. It is therefore preferable rather to use the average of a number of samples.

2. Principle

A cane sample on a stretcher is weighed on the platform mass meter. The cane in the sample is topped and trashed and the tops and trash are weighed separately on a heavy duty balance. The mass of the tops and trash is expressed as a percentage of the mass of the total sample.

3. Definitions

3.1 Tops

Tops refer to the portion of a cane stalk above its natural breaking point including all the green leaves and sheaths attached to that part of the stalk.

3.2 Trash

Trash refer to the leaves and sheaths attached to the cane stalk.

4. Apparatus

4.1 Platform mass meter readable to 100 g with a maximum capacity of 100 kg

4.2 Stretcher: 750 × 2 000 mm

4.3 Table

4.4 Metal container: 10 litre

4.5 Heavy duty balance readable to 5 g with a maximum capacity of 10 kg

5. Procedure

Weigh the stretcher with the cane sample on the platform mass meter and record the mass to the nearest 100 g. Tip the contents of the stretcher onto the table and record the mass of the empty stretcher to the nearest 100 g.

Top the cane at the natural breaking point, transfer the tops to the 10 litre container and record the mass to the nearest 5 g.

Empty the container. Remove all the trash from the cane stalk and weigh in the 10 litre container to the nearest 5 g.

6. Calculations

6.1 Tops

$$\text{Tops (\%)} = \frac{m_{\text{tops}}}{m_{\text{ss}} - m_{\text{s}} - m_{\text{tops}} - m_{\text{trash}}} \times 100$$

where m_{ss}	≡	mass of sample and stretcher (g)
m_{s}	≡	mass of stretcher (g)
m_{tops}	≡	mass of tops (g)
m_{trash}	≡	mass of trash (g)

Report to the nearest unit.

6.2 Trash

$$\text{Trash (\%)} = \frac{m_{\text{trash}}}{m_{\text{ss}} - m_{\text{s}} - m_{\text{tops}} - m_{\text{trash}}} \times 100$$

where m_{ss}	≡	mass of sample and stretcher (g)
m_{s}	≡	mass of stretcher (g)
m_{tops}	≡	mass of tops (g)
m_{trash}	≡	mass of trash (g)

Report to the nearest unit.

7. Example

7.1 Tops

mass of sample and stretcher	=	56 300 g
mass of stretcher	=	24 500 g
mass of tops	=	4 385 g
mass of trash	=	2 275 g
Tops (%)	=	17.44%

Report as 17%

7.2 Trash

mass of sample and stretcher	=	56 300 g
mass of stretcher	=	24 500 g
mass of tops	=	4 385 g
mass of trash	=	2 275 g
Trash (%)	=	9.05%

Report as 9%

8. References

SASTA (1985). *Laboratory Manual for South African Sugar Factories*. 3rd Edition: 372.