Bagasse Balance for a Season (Surplus or Deficit)

Bagasse produced and burnt in a season, off-season needs and the surplus or deficit, from cane crushed, bagasse % cane, steam % cane and the steam-to-bagasse ratio.

Method: Mass balance of bagasse over a season

Input parameters

Unit system: SI

Parameter	Value	Unit
Cane crushed in the season	600,000	t
Bagasse % cane	29.000	%
Boiler steam % cane	50.000	%
Steam-to-bagasse ratio	2.2000	kg/kg
Bagasse kept for the off-season	30,000	t

Calculated results

Parameter	Value	Unit
Bagasse produced	174,000	t
Bagasse burnt in season	136,364	t
Surplus (+) or deficit (−)	7,636.4	t
Surplus % of bagasse produced	4.3887	%

Formula and method

$$B_p = C_s B, \quad B_b = \frac{C_s s_b}{r}, \quad B_x = B_p - B_b - B_{off}$$

Variables

C_s	Cane crushed in the season	kg
B	Bagasse % cane	-
s_b	Boiler steam % cane	-
r	Steam-to-bagasse ratio	kg/kg
B_{off}	Bagasse kept for the off-season	kg
B_p	Bagasse produced	kg
B_b	Bagasse burnt in season	kg
B_x	Surplus (+) or deficit (−)	kg
B_x / B_p	Surplus % of bagasse produced	-

Method and standards

Mass balance.

Assumptions and limits

- Season totals.
- Bagasse % cane and the steam-to-bagasse ratio must be on the same moisture basis (bagasse as fired, normally about 50 % moisture).
- Storage losses of the off-season bagasse (heating, decay) are not included.

References

- Mass balance of bagasse over a season

Report details

Report reference	FCC-H2XJ-1QD5 (the same inputs always give the same reference)
Generated	17 November 2026, 19:37 UTC
Calculator	Bagasse Balance for a Season (Surplus or Deficit)
Method last reviewed	13 November 2026
Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/sugar-ethanol/steam-power/bagasse-season-balance

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.