# Lost Juice % Fibre and Extraction Ratio

Extraction ratio (eqn 20.11), brix of bagasse and lost undiluted juice % fibre (eqns 20.12–20.13) from routine mill analyses, as used to compare tandems.

**Method:** Hugot; Handbook of Cane Sugar Engineering; ...

## Input parameters

Unit system: SI

| Parameter | Value | Unit |
|---|---|---|
| Pol extraction | 95.500 | % |
| Fibre % cane | 14.500 | % |
| Pol % bagasse | 1.8000 | % |
| Purity of the last expressed juice | 72.000 | % |
| Brix of primary juice | 20.000 | % |
| Fibre % bagasse | 49.000 | % |

## Calculated results

| Parameter | Value | Unit |
|---|---|---|
| Extraction ratio 100(100 − e)/f | 31.034 | |
| Brix of bagasse | 2.5000 | % |
| Lost undiluted juice % fibre | 25.510 | % |

**Notes for this case**

- The extraction ratio (a plain number) and lost juice % fibre (shown in %) are close for modern mills, both near 34 (Hugot).

## Formula and method

$$ER = \frac{100(100 - e)}{f}, \quad Bx_B = \frac{Pol_B}{P_l}, \quad LJ = \frac{Bx_B}{B_1 f'}$$

### Variables

| | | |
|---|---|---|
| $e$ | Pol extraction | - |
| $f$ | Fibre % cane | - |
| $Pol_B$ | Pol % bagasse | - |
| $P_l$ | Purity of the last expressed juice | - |
| $B_1$ | Brix of primary juice | - |
| $f'$ | Fibre % bagasse | - |
| $ER$ | Extraction ratio 100(100 − e)/f | - |
| $Bx_B$ | Brix of bagasse | - |
| $LJ$ | Lost undiluted juice % fibre | - |

### Method and standards

Hugot's definitions (percent forms written with fractions).

### Assumptions and limits

- Routine analyses; apparent purities.
- ER is Hugot's plain number 100(100 − e)/f with e and f in per cent; LJ is shown in per cent. Both come out near 34 for modern tandems, which is why they can be compared directly.
- Purity above 100 % is rejected.

### References

- Hugot
- Handbook of Cane Sugar Engineering
- 3rd ed. (Elsevier, 1986)
- ch. 20
- eqns 20.11–20.14
- pp. 319–320

## Report details

| | |
|---|---|
| Report reference | FCC-RDZX-PCH9 (the same inputs always give the same reference) |
| Generated | 17 November 2026, 19:50 UTC |
| Calculator | Lost Juice % Fibre and Extraction Ratio |
| 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/milling/lost-juice-percent-fibre

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.