Reduced Mill Extraction (Noël Deerr and Mittal)

Mill extraction reduced to the standard 12.5 % fibre in cane by Noël Deerr's and by Mittal's formulae, from actual extraction and fibre % cane.

Method: Noël Deerr reduced extraction to 12.5 % fibre: RME = 100 (7 − V)/7; V = (1 − e)(1 − f)/f; …

Input parameters

Unit system: SI

Parameter	Value	Unit
Actual mill extraction	91.850	%
Fibre % cane	14.500	%

Calculated results

Parameter	Value	Unit
Deerr's loss term: pol not extracted per unit fibre, (1 − e)(1 − f)/f	0.48057	
Reduced extraction, Noël Deerr	93.135	%
Reduced extraction, Mittal	92.974	%

Notes for this case

- Both formulae assume pol lost per unit fibre is constant; they differ slightly away from 12.5 % fibre.

Formula and method

$$V = \frac{(1-e)(1-f)}{f}, \quad RME_{ND} = \frac{7-V}{7}, \quad RME_{M} = 1 - \frac{0.125\,(1-e)}{f}$$

Variables

e	Actual mill extraction	-
f	Fibre % cane	-
V	Deerr's loss term: pol not extracted per unit fibre, (1 − e)(1 − f)/f	-
RME_{ND}	Reduced extraction, Noël Deerr	-
RME_{M}	Reduced extraction, Mittal	-

Method and standards

Noël Deerr; Mittal.

Assumptions and limits

- Pol extraction basis; e and f are fractions in the formulas.

References

- Noël Deerr reduced extraction to 12.5 % fibre: RME = 100 (7 − V)/7
- V = (1 − e)(1 − f)/f
- Mittal: RME = 100 [1 − 0.125 (1 − e)/f] with e and f as fractions (12.5 (1 − e)/f with f in per cent)
- Sugar factory chemical control (daily manufacturing report) definitions
- as compiled in SugarProcessTech
- Formulas for calculating sugar industry DMR

Report details

Report reference	FCC-3HHS-GDKK (the same inputs always give the same reference)
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Calculator	Reduced Mill Extraction (Noël Deerr and Mittal)
Method last reviewed	13 November 2026
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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/reduced-mill-extraction

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.