DDGS Yield from a Grain Distillery

Distillers' dried grains with solubles (DDGS) per tonne of grain and per day from grain moisture, starch content and conversion, and the DDGS moisture.

Method: Dry-matter balance: DDGS dry = grain dry − starch converted

Input parameters

Unit system: SI

Parameter	Value	Unit
Grain	250.00	t/d
Grain moisture	13.000	%
Starch % grain (as received)	62.000	%
Starch converted to ethanol and CO_2	95.000	%
DDGS moisture	10.000	%

Calculated results

Parameter	Value	Unit
DDGS dry matter	70.250	t/d
DDGS at its moisture	78.056	t/d
DDGS per tonne of grain	312.22	kg/t

Notes for this case

- Yeast mass and added enzymes and nutrients are not counted; actual DDGS is usually slightly higher.

Formula and method

$$\dot{m}_d = \dot{m}_g(1 - w_g - S\eta_c), \quad \dot{m}_{DDGS} = \frac{\dot{m}_d}{1 - w_d}$$

Variables

$\dot{m}_g$	Grain	kg/s
w_g	Grain moisture	-
S	Starch % grain (as received)	-
η_c	Starch converted to ethanol and CO_2	-
w_d	DDGS moisture	-
$\dot{m}_d$	DDGS dry matter	kg/s
$\dot{m}_{DDGS}$	DDGS at its moisture	kg/s
y	DDGS per tonne of grain	kg/kg

Method and standards

Dry-matter balance.

Assumptions and limits

- No solids lost.
- Only the starch converted to ethanol and CO_2 leaves the dry matter. Fermentation by-products (glycerol, yeast) stay in it as part of the unconverted remainder; enzymes, nutrients and other additions are not counted, so actual DDGS is usually slightly higher.

References

- Dry-matter balance: DDGS dry = grain dry − starch converted

Report details

Report reference	FCC-8744-BTD7 (the same inputs always give the same reference)
Generated	17 November 2026, 19:45 UTC
Calculator	DDGS Yield from a Grain Distillery
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/ethanol/ddgs-yield

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.