

Calculating 2024 Welsh Slurry Production

Torriad Farm

Slurry production per month (based on undiluted slurry)

Livestock type on slurry or part-slurry based system	No. of livestock units on slurry or part-based system	Proportion of excreta collected as slurry	Volume per livestock unit (or place) per month (m ³)	Volume produced each month (m ³)	How many months housed?	Total production based on months housed
Dairy cow over 9000/its	460	1	192	883.2	12	10598.4
Total:	460					
Total volume of slurry produced per month (m ³)				883		A 10598

Calculate the average volume of rainfall that enters your slurry store(s) each month

Average Rainfall (mm)	B 59
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Area of open slurry stores(s) plus concrete surface area (m ²)	Average monthly rainfall (B)	Conversion to m ³	Average volume of rainfall entering slurry store(s) per month (m ³)
7034	59	/1000	411
Total rainfall for 12 months (m ³)			C 4938

Rainfall figures are taken from
Average rainfall figures
(1st October to March 31st)
DataMapWales (gov.wales)

Calculate the volume of wash water that enters the slurry store each month

All months cows are milked	Number of dairy cows	No. of times dairy cows are milked per day	Wash water used per cow (m ³)	Monthly wash water production (m ³)
Jan	395	3	0.45	533
Feb	400	3	0.45	540
March	405	3	0.45	547
Apr	405	3	0.45	547
May	400	3	0.45	540
June	410	3	0.45	554
July	415	3	0.45	560
Aug	420	3	0.45	567
Sept	415	3	0.45	560
Oct	420	3	0.45	567
Nov	415	3	0.45	560
Dec	420	3	0.45	567
Total wash water for 12 months (m ³)				D 6642

Total Production

Calculate the total volume of slurry (including open surface area, rainfall and wash water) that needs to be spread

Slurry produced per housing period (A)	Average volume of rainfall entering slurry store(s) per annum (C)	Average wash water per annum (D)	Total annual slurry plus dilution (m ³)
10598	4938	6642	E 22178

Calculating 2024 Welsh Slurry Storage Requirement

Torriad Farm

Slurry production per month (based on undiluted slurry)

Livestock type on slurry or part-slurry based system	No. of livestock units on slurry or part-slurry based system	Proportion of excreta collected as slurry	Volume per livestock unit (or place) per month (m³)	Volume produced each month (m³)
Dairy cow over 9000lts	460	1	192	8832
Total:	460			

Total volume of slurry produced per month (m³)	A	883
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Calculate the average volume of rainfall that enters your slurry store(s) each month

October Rainfall	58.5	=	58.5	Rainfall figures are taken from Average rainfall figures (1st October to March 31st) DataMapWales (gov.wales)
November Rainfall	58.5			
December Rainfall	58.5			
January Rainfall	58.5			
February Rainfall	58.5			

Average Rainfall (mm)	B	59
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Area of open slurry stores(s) plus concrete surface area (m²)	Average monthly rainfall (B)	Conversion to m³	Average volume of rainfall entering slurry store(s) per month (m³)
7034	x 59	/1000	C 411

Calculate the volume of wash water that enters the slurry store each month

Months within the closed period	Number of dairy cows	No. of times dairy cows are milked per day	Wash water used per cow (m³)	Monthly wash water production (m³)
October	420	3	0.45	567
November	415	3	0.45	560
December	420	3	0.45	567
January	395	3	0.45	533
February	400	3	0.45	540
Average wash water per month in closed period				D 554

Calculate the volume of potential silage effluent that needs to be included in the storage calculation

List of all pits that drain to the slurry storage	Length	Width	Height	Capacity	Production of Silage Effluent m³ Calculated from the capacity, using DEFRA figures
Pit One	55	21	3.5	4043	47.03
Pit Two	55	7	3.5	1348	26.95
Total effluent to be included in storage calculation:					E 73.98

Storage Requirement

Calculate the total volume of slurry (including dilution) that is required to be stored for the closed period

Slurry produced per month (A)	Average volume of rainfall entering slurry store(s) per month (C)	Average monthly wash water (D)	Monthly slurry plus dilution (m³)			
883	+	411	+	554	F	1848

Production of Silage Effluent (E)	Monthly slurry plus dilution (F)	Slurry Storage for 5 months	Percentage collected (%)	Total volume of slurry plus dilution to be stored (m³)		
74	1848	x	5	x	100	9315

****Please note the 'Production of Silage Effluent (E)' is added to the volume to be stored following the initial calculation of 'Monthly slurry plus dilution (F)' and 'Slurry Storage' 5 or 4 months**

Slurry Storage Measurements

Ref	Earth banked store (Yes/No)	Circular Store (Yes/No)	Length (m)	Width / Diameter (m)	Working height or depth (m)	Side Run (m) (Length)	End Run (m) (Width)	Freeboard required (m)	Ramp (m) Length	Ramp Width (m)	Capacity (m³)
1	Yes	No	42.0	50.0	4.0	4.0	4.0	0.75			5490
2	Yes	No	53.0	38.0	5.0	5.0	5.0	0.75			6502
Total Existing Capacity =											11991

Total capacity includes an extra 25% rainfall collection, all deductions from the run and rise and also freeboard.

This holding has Sufficient Capacity

Calculation Date: