

## Metan- og ammoniakemissionen fra fem teltoverdækkede gyllebeholdere målt i lagersæsonen 2022/2023

### Introduktion

Dette notat beskriver resultaterne fra målinger udført på fem teltoverdækkede gyllebeholdere med henholdsvis sommerforsuret grisegylle, grisegylle, kvæggylle og to beholdere som modtog afgasset gylle fra biogasanlæg. Resultaterne herfra inddrages i 2024 med tilsvarende resultater fra fem andre teltoverdækkede gyllebeholdere i en publikation, som skal danne grundlag for nye emissionstal. Resultaterne udgives ikke for sig selv, men er kort gengivet i det følgende. Der henvises til rapporten "Ammoniakemission fra teltoverdækkede gyllebeholdere", SEGES, 2022 [1] for nærmere beskrivelse af baggrund og metoder.

### Materialer og metoder

Der er udført målinger på 5 gyllebeholdere med teltoverdækning igennem en periode på ét år. Målingerne er så vidt muligt foretaget efter retningslinjerne i VERA "Test protocol for covers and other mitigation technologies for reduction of gaseous emissions from stored manure".

### Gyllebeholdere

**Tabel 1.** Beskrivelse af gyllebeholdere

Beholder	Gylletype	Volumen beholder m <sup>3</sup>	Volumen telt	Overfladeareal m <sup>2</sup>
AC1	Slagtegrise (sommerforsuret)	2543	1151	633

P1	Slagtegrise	2543	1151	633
C1	Malkekvæg	5000	2692	1116
AD1	Afgasset biomasse (Økologisk linje)	5000	2063	935
AD2	Afgasset biomasse (konventionel linje)	2500	1127	625

Beholder AC1 med sommerforsuret grisegylle og beholder P1 havde samme størrelse og lokalitet. Det er desuden så vidt muligt forsøgt at fylde og tømme de to beholdere ens igennem måleperioden, så P1 kunne udgøre kontrolbeholder for sommerforsuringen.

Alle gylletanke er med fast teltdug, hvorpå der er monteret 3 – 4 udluftningsventiler, som sikrer at bl.a. koncentrationen af metan under teltdugen ikke bliver for høj og der derved dannes eksplosionsfare.

## Målemetode

Emissionen af ammoniak og metan blev bestemt ved hjælp af sporgas-henfaldsmetoden (tracer-decay), hvor sporgas (lattergas eller freon) blev tilsat periodisk, til et bestemt niveau, hvorefter tilsætningen blev stoppet. Koncentrationen af sporgas blev herefter fulgt over tid og luftskiftet bestemt ud fra den generelle massebalance for beholderen. Koncentrationen af ammoniak og metan blev bestemt med CRDS (Picarro, Cavity Ring Down Spectroscopy, G2509) For nærmere beskrivelse af den anvendte metode henvises til [1]

## Resultater

Tabel 2 viser den opgjorte ammoniak- og metanemission for de fem tanke i hver årstid. Den målte emission for hver enkelt tilsætning af sporgas kan ses i Tabel A1 (Appendiks)

**Table 2** Beregnede og målte parametre for hver årstid. Emissionsværdier (NH<sub>3</sub>-N emission, kg m<sup>-2</sup> år<sup>-1</sup>, og CH<sub>4</sub> emission, kg m<sup>-3</sup> dag<sup>-1</sup>) er beregnet ud fra summen af den timelige emission (95%-konfidensinterval er angivet i parentes).

	Sæson	Måleperiode (dato)	Måledage inkluderet i beregninger* (døgn)	EkspONENTIET fit (-)	Ventilationsrate (m <sup>3</sup> /h)	NH <sub>3</sub> konc. i tank (ppm)	NH <sub>3</sub> -N emission (kg m <sup>-2</sup> år <sup>-1</sup> )	CH <sub>4</sub> konc. i tank (ppm)	CH <sub>4</sub> emission (kg m <sup>-3</sup> dag <sup>-1</sup> )
AC1 - Sommerforsuring	Sommer	19-07-2022	16	0.950	86.0	13.1	0.010	24461.0	0.028
		21-07-2022			(11.8)	(8.6)	(0.0068)	(7429.8)	(0.011)
	Efterår	09-10-2022	16	0.983	44.2	17.1	0.0061	8566.6	0.0033
		13-10-2022			(7.9)	(2.8)	(0.00086)	(2649.2)	(0.0025)
Vinter	04-12-2022	11	0.997	35.8	21.8	0.0062	6247.3	0.0014	
	09-12-2022			(21.3)	(7.3)	(0.0017)	(49.7)	(0.0016)	
Forår*	20-03-2023	3	0.917	76.3	2.6	0.0015	586.2	0.00032	
	23-03-2023			(-)	(-)	(-)	(-)	(-)	
P1 - Grisehyll	Sommer	20-07-2022	14	0.952	104.0	19.4	0.012	52335.7	0.067
		22-07-2022			(48.2)	(11.4)	(0.0078)	(15948.9)	(0.043)
	Efterår	09-10-2022	20	0.987	43.3	33.0	0.011	23468.4	0.0091
		14-10-2022			(5.6)	(11.9)	(0.0046)	(8332.7)	(0.0030)
	Vinter	02-12-2022	12	0.998	39.9	26.1	0.0093	16126.6	0.0050
08-12-2022		(16.7)			(15.9)	(0.010)	(13469.9)	(0.0013)	
Forår*	31-03-2023	3	0.989	75.4	22.9	0.015	21938.8	0.011	
	03-04-2023			(-)	(-)	(-)	(-)	(-)	
C1 - Kvæggylle	Sommer	16-09-2022	9	0.967	185.0	1.5	0.0010	26381.2	0.031
		18-09-2022			(60.4)	(0.8)	(0.00057)	(5645.7)	(0.0085)
	Efterår	22-11-2022	7	0.977	254.7	2.0	0.0027	14877.4	0.015
		24-11-2022			(112.7)	(0.9)	(0.0023)	(6960.3)	(0.0053)
Vinter	03-02-2023	7	0.992	178.5	3.3	0.0029	5878.8	0.0031	
	06-02-2023			(156.1)	(0.2)	(0.0027)	(3785.2)	(0.00080)	
Forår	19-04-2023	10	0.972	270.2	5.6	0.0059	5862.7	0.0068	
	21-04-2023			(107.9)	(3.8)	(0.0031)	(1671.1)	(0.0021)	
AD1 - Af-	Sommer	01-08-2022	12	0.979	103.6	9.0	0.0048	13856.6	0.017
		05-08-2022			(8.7)	(10.9)	(0.0058)	(4712.5)	(0.0033)
Efterår	10-10-2022	8	0.977	121.2	12.5	0.0073	31513.9	0.019	

		13-10-2022			(22.4)	(12.0)	(0.0044)	(7788.6)	(0.0015)
	Vinter	23-12-2022	7	0.942	258.6	0.6	0.0011	9569.1	0.027
		25-12-2022			(122.8)	(0.3)	(0.00094)	(2776.6)	(0.0068)
	Forår	22-03-2023	10	0.931	113.3	39.7	(0.035)	2314.9	0.0016
		26-03-2023			(49.6)	(73.5)	(0.066)	(1059.1)	(0.0011)
	AD2 – Afgasset gylle	Sommer	29-08-2022	6	0.962	146.3	4.8	0.0088	17969.2
31-08-2022			(38.2)			(4.7)	(0.011)	(6230.2)	(0.0031)
Efterår		05-11-2022	5	0.991	125.9	0.3	0.00031	8147.8	0.0064
		06-11-2022			(12.0)	(0.0)	(0.000053)	(966.0)	(0.00026)
Vinter		04-01-2023	6	0.972	132.6	3.1	0.0035	1598.6	0.0013
		06-01-2023			(35.6)	(0.2)	(0.0011)	(248.8)	(0.00038)
Forår	02-04-2023	12	0.951	172.8	49.4	0.11	346.3	0.00051	
	04-04-2023			(93.6)	(56.2)	(0.13)	(240.9)	(0.00022)	

\*Måledage bestemmes som hele døgn = 24 timer

\*\* Baseret på en enkelt sporgastilsætning

Til forskel fra tidligere udførte målinger [1] er sporgaskurver udjævnet (R, loess() function) for at mindske indflydelsen af små måleusikkerheder og emission er beregnet ud fra summen af den timelige emission. Desuden er metanemissionen pr. m<sup>3</sup> gylle i beholderen bestemt.

Temperaturen er bestemt i 4-5 niveauer ned gennem gyllen i beholderen (afhængigt af størrelsen på gyllebeholderen). Gennemsnitlige temperaturmålinger for hver årstid samt sekundære parametre er angivet i tabel 3. Tilsvarende for hver tilsætning af sporgas er angivet i tabel A2 og A3 (appendiks).

**Tabel 3.** Sekundære parametre. Middelværdi med 95%-konfidensinterval i parentes.

	Periode start/slut)	Temp Ude (°C)	Temp Under telt (°C)	Temp gylle 0.5 m (°C)	Temp gylle 1.5 m (°C)	Temp gylle 2.5 m (°C)	Temp gylle 3.5 m (°C)	Temp gylle 4.5 m (°C)	Vind ha- stighed m s <sup>-1</sup>	Temp DMI (°C)	Fugt DMI (%)	pH (-)
AC1 - Sommerforsuring	Sommer	18.0 (2.4)	22.0 (2.6)	18.5 (1.0)	20.2 (1.6)	21.3 (2.1)	21.7 (2.3)	- -	3.5 (0.6)	16.0 (2.1)	76.7 (4.2)	6.8 (-)
	Efterår	11.6 (0.4)	13.6 (1.1)	15.5 (1.1)	15.4 (1.5)	14.4 (0.5)	13.8 (1.0)	- -	3.2 (0.6)	10.9 (0.7)	92.2 (2.8)	7.6 (-)
	Vinter	1.9 (2.6)	4.2 (2.3)	10.8 (0.7)	8.7 (1.5)	8.6 (1.4)	8.5 (1.4)	- -	3.6 (2.4)	0.3 (4.0)	90.7 (3.1)	7.5 (-)
	Forår	6.8 (2.6)	7.5 (2.3)	6.8 (0.7)	7.6 (1.5)	7.5 (1.4)	7.5 (1.4)	- -	4.7 (2.4)	6.6 (4.0)	93.8 (3.1)	7.6 (-)
P1 - Grise-gylle	Sommer	16.3 (1.4)	20.4 (1.5)	18.1 (0.8)	18.4 (0.2)	20.1 (1.9)	20.1 (1.5)	- -	3.8 (0.8)	14.8 (1.6)	80.9 (4.9)	7.7 (-)
	Efterår	9.8 (3.9)	11.1 (3.9)	14.5 (1.7)	13.2 (2.7)	13.3 (2.7)	11.2 (3.8)	- (-)	3.2 (0.5)	9.1 (4.2)	92.5 (2.0)	7.9 (-)
	Vinter	0.6 (-)	1.8 (-)	10.9 (-)	8.0 (-)	7.9 (-)	2.2 (-)	- (-)	2.4 (-)	-1.6 (-)	92.7 (-)	7.8 (-)
	Forår	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	4.1 (-)	2.9 (-)	68.9 (-)	7.7 (-)
C1 - Kvæggylle	Sommer	14.3 (0.5)	15.3 (0.5)	17.1 (0.3)	15.9 (0.6)	15.0 (0.5)	15.5 (0.5)	- (-)	3.7 (1.4)	11.8 (2.0)	81.7 (1.4)	7.6 (-)
	Efterår	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	4.0 (0.3)	3.3 (2.2)	92.0 (6.9)	7.7 (-)
	Vinter	4.2 (3.3)	3.9 (3.0)	7.3 (0.1)	7.1 (0.1)	6.3 (0.2)	3.9 (2.9)	- (-)	4.5 (2.1)	4.1 (4.4)	89.6 (0.9)	7.2 (-)
	Forår	17.8 (-)	18.8 (-)	10.5 (-)	17.7 (-)	18.3 (-)	19.1 (-)	- (-)	3.9 (0.5)	8.1 (1.8)	73.8 (5.6)	7.6 (-)
AD1 - Afgasset gylle	Sommer	18.9 (1.5)	21.3 (0.8)	23.0 (0.9)	20.6 (0.5)	20.5 (0.5)	20.6 (0.6)	20.9 (0.7)	2.7 (0.8)	15.4 (1.0)	83.8 (4.4)	8.1 (-)
	Efterår	11.8 (1.0)	13.5 (1.0)	23.8 (0.3)	24.0 (0.4)	23.6 (0.4)	13.2 (1.0)	13.1 (1.0)	3.4 (1.0)	10.4 (1.0)	89.6 (2.5)	7.9 (-)
	Vinter	5.0 (1.5)	5.4 (1.5)	16.2 (2.1)	16.4 (2.3)	13.3 (2.5)	12.8 (2.1)	5.1 (1.4)	3.8 (1.7)	4.0 (1.9)	94.3 (4.4)	7.8 (-)
	Forår	5.7 (6.6)	6.7 (7.6)	12.5 (0.6)	11.2 (2.8)	9.5 (0.8)	9.8 (0.4)	6.3 (7.5)	5.5 (3.3)	3.7 (6.2)	67.5 (3.4)	8.1 (-)
AD2 - Afgasset gylle	Sommer	18.4 (1.3)	20.6 (1.3)	21.2 (0.1)	22.4 (0.2)	20.7 (1.2)	20.7 (1.3)	- (-)	3.2 (0.4)	15.5 (0.8)	74.9 (12.2)	8.0 (-)
	Efterår	11.3 (0.8)	16.2 (0.4)	14.5 (0.1)	16.7 (0.4)	11.6 (0.7)	14.4 (0.3)	- (-)	5.0 (0.2)	10.8 (0.5)	91.0 (2.2)	7.5 (-)
	Vinter	6.6 (0.9)	7.6 (0.1)	8.4 (0.6)	8.9 (0.5)	11.1 (0.9)	6.9 (0.2)	- (-)	5.1 (0.9)	6.3 (1.0)	92.9 (1.8)	8.4 (-)
	Forår	7.5 (0.7)	6.8 (0.3)	7.8 (0.1)	7.3 (0.0)	6.8 (0.7)	6.8 (0.0)	- (-)	2.6 (1.6)	7.4 (1.8)	60.5 (41.3)	7.9 (-)

## Konklusion

Ammoniak og metanemissionen fra 5 gylletanke med teltoverdækning blev bestemt. Den laveste ammoniakemission blev fundet fra beholderen med kvæggylle ( $0,003 \pm 0,002 \text{ kg NH}_3\text{-N m}^{-2} \text{ år}^{-1}$ ), mens den højeste ammoniakemission blev fundet fra beholderen med grisegylle samt den ene beholder med afgasset gylle ( $0,012 \pm 0,003/0,004 \text{ kg NH}_3\text{-N m}^{-2} \text{ år}^{-1}$  for begge beholdere). Sommerforsuring reducerede ammoniakemissionen med 50% til  $0,006 \pm 0,003 \text{ kg NH}_3\text{-N m}^{-2} \text{ år}^{-1}$  sammenlignet med den ikke-forsurede beholder. For metan reducerede sommerforsuring emissionen med 64% med gennemsnitligt over hele perioden  $0,023 \pm 0,016 \text{ kg CH}_4 \text{ m}^{-3} \text{ dag}^{-1}$  fra den ikke-forsurede og  $0,008 \pm 0,005 \text{ kg CH}_4 \text{ m}^{-3} \text{ dag}^{-1}$  fra den forsurede beholder. For beholderne med afgasset gylle, afgav AD1 omkring 54% mere metan ( $0,016 \pm 0,004 \text{ kg CH}_4 \text{ m}^{-3} \text{ dag}^{-1}$ ) end AD2 ( $0,007 \pm 0,001 \text{ kg CH}_4 \text{ m}^{-3} \text{ dag}^{-1}$ ). Dette forventes at hænge sammen med en højere temperatur i gyllen i beholder AD1 sammenlignet med beholder AD2.

## Referencer

- [1] Ammoniakemission fra teltoverdækkede gyllebeholdere, Pernille Lund Kasper & Michael Holm, Rapport udført for Miljøministeriet, 2022

## Appendix

**Table A1.** Koncentration og emission af ammoniak og metan ved hver tilsætning af sporgas. 95%-konfidensinterval er angivet med grå tekst.

	Start (dato)	N (døgn)	Eksponen- tielt fit (R <sup>2</sup> )  (-)	Ventilati- ons rate  (m <sup>3</sup> time <sup>-1</sup> )	NH <sub>3</sub> -N  Emis- sion i alt  (kg må- leperi- ode <sup>-1</sup> )	NH <sub>3</sub> -N  Emission  (kg m <sup>-2</sup> år <sup>-1</sup> )	CH <sub>4</sub>  Emis- sion i alt  (kg må- leperi- ode <sup>-1</sup> )	CH <sub>4</sub>  Emission  (kg m <sup>-3</sup> dag <sup>-1</sup> )	NH <sub>3</sub>  Konc.  (ppm)	CH <sub>4</sub>  Konc.  (ppm)
AC1 Sommerforsuring	18-06-22	3	0.991	101.0	0.1174	0.02257	107.37	0.04299	24.98	22782.3
	21-06-22			15.1					2.5	923.0
	05-07-22	1	0.919	78.1	0.0393	0.02266	51.50	0.05197	31.27	43840.7
	06-07-22			25.5					7.1	15.1
	08-07-22	3	0.991	103.3	0.0147	0.00283	44.83	0.01508	3.86	16354.0
	11-07-22			67.6					1.1	1064.2
	11-07-22	2	0.978	70.5	0.0064	0.00185	59.81	0.03018	2.44	28193.4
	13-07-22			12.7					0.8	707.3
	18-07-22	1	0.862	104.0	0.0038	0.00222	17.63	0.01724	2.11	12640.9
	19-07-22			34.1					0.6	851.7
	18-08-22	5	0.996	69.9	0.0741	0.00854	91.40	0.01683	15.47	25232.7
	23-08-22			3.2					2.0	440.8
	23-08-22	1	0.912	75.0	0.0158	0.00913	25.20	0.02320	11.44	22183.4
	24-08-22			25.2					3.5	2083.1
	23-09-22	3	0.990	50.1	0.0298	0.00572	29.07	0.00691	14.06	12294.4
	26-09-22			3.5					1.8	265.1
	28-09-22	6	0.987	46.4	0.0637	0.00612	19.75	0.00220	15.77	8758.7
	04-10-22			1.9					1.3	228.9
	19-10-22	5	0.987	32.3	0.0458	0.00529	9.66	0.00118	20.55	6999.7
	24-10-22			2.1					1.5	133.7
24-10-22	2	0.970	47.9	0.0254	0.00732	9.45	0.00289	18.09	6213.7	
26-10-22			6.8					1.6	148.9	
02-12-22	3	0.999	46.6	0.0367	0.00705	14.58	0.00218	18.05	6272.6	
05-12-22			1.0					0.8	182.3	
05-12-22	8	0.996	24.9	0.0735	0.00530	9.41	0.00053	25.53	6221.9	
13-12-22			1.5					0.8	102.4	
20-03-23	3	0.917	76.3	0.0078	0.00151	1.94	0.00032	2.60	586.2	
23-03-23			16.3					0.1	30.0	
P1 Grisehyll	17-06-22	4	0.997	108.5	0.1968	0.02835	153.11	0.04976	35.50	23451.6
	21-06-22			10.5					3.7	1336.9
	07-07-22	1	0.949	86.2	0.0252	0.01452	40.56	0.03966	25.94	44468.7
	08-07-22			31.4					5.3	777.9
	10-07-22	2	0.831	87.3	0.0456	0.01314	92.92	0.04543	24.84	46568.6
	12-07-22			26.2					5.1	879.4
	12-07-22	6	0.992	44.4	0.0796	0.00765	173.04	0.02820	26.67	49145.5
	18-07-22			4.1					2.6	1039.7
18-08-22	1	0.969	219.4	0.0076	0.00439	275.58	0.17302	2.35	74131.7	

	19-08-22		72.9					0.5	5626.6	
	23-08-22	1	0.972	78.2	0.0018	0.00104	100.90	0.06335	1.14	76248.0
	24-08-22		35.7						0.3	3382.7
	23-09-22	5	0.994	38.6	0.0527	0.00607	111.23	0.01343	19.66	35532.5
	28-09-22		2.7						1.3	1198.6
	28-09-22	6	0.988	45.2	0.1139	0.01094	90.73	0.00863	29.38	20967.9
	04-10-22		1.8						1.7	800.4
	19-10-22	4	0.985	39.0	0.0740	0.01067	55.03	0.00786	34.13	21799.1
	23-10-22		3.3						1.9	515.5
	24-10-22	5	0.981	50.6	0.1524	0.01757	55.89	0.00638	48.85	15574.4
	29-10-22		3.7						1.6	299.9
	30-11-22	3	0.998	48.4	0.0736	0.01413	22.73	0.00433	34.19	9254.1
	03-12-22		1.3						0.7	256.9
	03-12-22	9	0.997	31.4	0.0690	0.00442	104.19	0.00569	17.97	22999.1
	12-12-22		1.4						1.5	2037.2
	31-03-23	4	0.989	75.4	0.0798	0.01532	78.43	0.01082	22.91	21938.8
	03-04-23		7.6						2.0	1029.1
C1 Kvæggylle	12-09-22	2	0.950	258.4	0.0084	0.00138	160.73	0.04287	1.71	25940.4
	14-09-22		33.4						0.3	1479.0
	14-09-22	1	0.971	213.0	0.0029	0.00094	55.42	0.02956	1.17	20700.9
	15-09-22		60.5						0.2	438.3
	16-09-22	4	0.999	141.6	0.0021	0.00017	203.85	0.02196	0.62	24523.9
	20-09-22		18.7						0.2	784.0
	20-09-22	2	0.947	127.2	0.0087	0.00141	138.16	0.02976	2.53	34359.8
	22-09-22		22.2						0.5	496.0
	17-11-22	3	0.999	424.5	0.0183	0.00599	53.36	0.01578	3.07	7819.9
	18-11-22		24.1						0.1	144.4
	21-11-22	2	0.951	192.8	0.0048	0.00078	152.57	0.02256	0.83	24735.7
	23-11-22		20.8						0.1	1638.0
	23-11-22	2	0.998	225.1	0.0151	0.00246	102.73	0.01403	2.34	13933.8
	25-11-22		10.5						0.1	158.9
	28-11-22	2	0.960	176.3	0.0095	0.00156	69.79	0.00953	1.85	13020.1
	30-11-22		23.4						0.2	559.1
	31-01-23	5	0.993	98.9	0.0226	0.00148	64.18	0.00272	3.18	7810.1
	05-02-23		5.4						0.2	222.5
	06-02-23	2	0.992	258.2	0.0261	0.00427	33.39	0.00354	3.43	3947.6
	08-02-23		25.9						0.2	160.0
	06-04-23	1	0.997	429.7	0.0201	0.00658	42.16	0.01041	3.48	6170.7
	07-04-23		42.8						0.9	527.0
08-04-23	2	0.968	163.9	0.0078	0.00255	21.23	0.00524	4.99	8310.1	
09-04-23		50.1						0.9	432.3	
11-04-23	2	0.931	375.5	0.0375	0.00614	65.72	0.00811	3.58	5503.8	
13-04-23		83.1						0.4	210.4	
14-04-23	2	0.979	201.6	0.0088	0.00288	20.30	0.00501	2.86	6315.7	
15-04-23		22.8						0.4	110.8	
25-05-23	5	0.984	180.2	0.1717	0.01123	44.06	0.00510	13.28	3013.0	



	30-05-23			8.1					0.9	84.8
AD1 Afgasset gylle	28-07-22	4	0.993	96.0	0.0806	0.01049	44.50	0.01457	19.80	10087.8
	31-07-22			8.5					2.2	267.2
	01-08-22	4	0.970	111.5	0.0329	0.00321	76.09	0.01712	6.05	13154.4
	05-08-22			5.2					0.8	474.9
	05-08-22	5	0.975	103.3	0.0083	0.00065	140.26	0.02043	1.15	18327.5
	10-08-22			5.9					0.2	274.8
	06-10-22	3	0.967	144.0	0.0506	0.00659	157.05	0.01779	7.08	23968.7
	09-10-22			13.4					1.3	984.8
	11-10-22	2	0.986	108.0	0.0194	0.00379	120.92	0.02041	5.69	33123.9
	13-10-22			12.5					0.7	739.5
	13-10-22	3	0.978	111.5	0.0876	0.01140	166.99	0.01867	24.71	37449.0
	16-10-22			8.6					2.9	1078.4
	19-12-22	2	0.988	242.0	0.0046	0.00090	85.94	0.03170	0.56	11050.5
	21-12-22			30.7					0.1	763.8
	23-12-22	3	0.875	159.4	0.0035	0.00046	81.66	0.02008	0.38	10920.0
	26-12-22			29.7					0.1	616.9
	27-12-22	2	0.964	374.4	0.0106	0.00207	76.96	0.02839	0.85	6736.8
	29-12-22			52.2					0.1	431.1
	28-02-23	5	0.998	97.2	0.0167	0.00130	23.69	0.00125	2.17	3088.0
	05-03-23			7.6					0.2	111.6
02-03-23	3	0.833	79.8	0.0080	0.00105	9.09	0.00079	2.22	2582.3	
05-03-23			17.2					0.3	96.9	
04-05-23	2	0.962	162.9	0.5212	0.10174	7.27	0.00263	114.76	1274.3	
06-05-23			31.0					2.7	122.1	
AD2 Afgasset biomasse	26-08-22	2	0.986	151.4	0.0151	0.00441	81.84	0.02424	3.22	17437.2
	28-08-22			14.1					0.5	570.7
	29-08-22	1	0.913	177.3	0.0343	0.02003	33.49	0.01879	9.58	12748.8
	30-08-22			40.0					14.9	995.4
	31-08-22	3	0.986	110.3	0.0094	0.00183	123.09	0.02188	1.65	23721.6
	03-09-22			11.2					0.4	1218.2
	01-11-22	2	0.987	118.4	0.0009	0.00028	33.46	0.00669	0.27	8908.2
	03-11-22			8.7					0.0	465.4
	05-11-22	2	0.988	121.3	0.0010	0.00030	31.55	0.00631	0.31	8310.8
	07-11-22			8.1					0.1	329.5
	08-11-22	1	0.998	138.1	0.0006	0.00036	15.70	0.00628	0.34	7224.4
	09-11-22			12.4					0.0	117.2
	31-12-22	1	0.958	149.4	0.0075	0.00438	3.93	0.00157	3.40	1705.1
	01-01-23			54.2					0.4	117.4
	02-01-23	2	0.988	125.1	0.0108	0.00316	7.74	0.00155	3.01	1893.3
	04-01-23			9.3					0.2	63.7
	05-01-23	2	0.974	85.6	0.0074	0.00216	3.76	0.00075	2.97	1483.3
	07-01-23			25.9					0.1	76.6
10-01-23	1	0.969	170.2	0.0076	0.00445	3.53	0.00141	3.13	1312.6	
11-01-23			46.6					0.2	93.0	
17-03-23	3	0.985	89.2	0.0119	0.00232	1.91	0.00025	3.20	460.6	

20-03-23			11.7					0.1	25.3
20-03-23	2	0.911	96.7	0.0072	0.00211	1.78	0.00036	2.58	585.1
22-03-23			20.1					15.12	38.6
20-03-23	2	0.960	116.2	0.0089	0.00260	2.07	0.00041	2.58	585.1
22-03-23			32.4					0.1	38.6
20-04-23	2	0.980	224.6	0.7933	0.23181	0.35	0.00069	129.01	52.4
22-04-23			64.8					4.1	4.1
24-04-23	3	0.917	337.0	1.5998	0.31163	0.65	0.00086	109.50	48.4
27-04-23			130.1					6.6	7.8

**Table A2.** Gennemsnitlig målt temperatur ude, under teltdug og i fire-fem niveauer ned gennem tanken i hver periode, hvor der er tilsat sporgas. 95%-konfidensintervaller er angivet med grå tekst.

	Periode start/slut)	Temp Ude	Temp Under telt	Temp gylle 0.5 m	Temp gylle 1.5 m	Temp gylle 2.5 m	Temp gylle 3.5 m	Temp gylle 4.5 m	Volumen headspace	Volumen gylle
		(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	m <sup>3</sup>	m <sup>3</sup>
AC1 Sommerforsuring	18-06-22	16.0	19.7	16.1	17.0	18.9	19.4	-	2861.4	832.6
	21-06-22	0.7	1.5	0.1	0.1	1.1	1.3	-	-	-
	05-07-22	14.8	19.9	17.8	18.5	19.6	20.1	-	2703.0	991.0
	06-07-22	1.3	2.8	0.01	0.4	2.3	2.6	-	-	-
	08-07-22	14.8	20.4	18.5	20.8	19.8	20.1	-	2703.0	991.0
	11-07-22	0.9	2.0	0.02	0.2	1.5	1.7	-	-	-
	11-07-22	19.3	25.1	18.5	20.0	24.2	24.7	-	2703.0	991.0
	13-07-22	1.0	1.9	0.02	0.3	1.5	1.7	-	-	-
	18-07-22	24.2	28.5	18.9	23.9	26.4	27.2	-	2671.3	1022.7
	19-07-22	1.8	2.6	0.01	0.6	2.0	2.3	-	-	-
	18-08-22	18.7	21.8	20.1	20.8	20.9	21.3	-	2608.0	1086.0
	23-08-22	1.1	1.6	0.03	0.1	1.2	1.4	-	-	-
	23-08-22	18.1	18.9	20.0	20.7	19.1	19.0	-	2608.0	1086.0
	24-08-22	1.3	1.8	0.1	0.1	1.3	1.5	-	-	-
	23-09-22	11.7	15.0	17.0	17.2	15.2	15.1	-	2291.2	1402.8
	26-09-22	0.9	1.1	0.1	0.1	0.8	1.0	-	-	-
	28-09-22	11.5	13.9	16.0	16.0	14.3	14.0	-	2196.2	1497.8
	04-10-22	0.4	0.5	0.02	0.0	0.3	0.4	-	-	-
	19-10-22	11.1	12.5	14.6	14.0	13.9	12.7	-	2056.9	1637.1
	24-10-22	0.6	0.5	0.01	0.0	0.02	0.5	-	-	-
24-10-22	12.0	13.0	14.5	14.3	14.2	13.2	-	2056.9	1637.1	
26-10-22	0.5	0.6	0.01	0.1	0.1	0.5	-	-	-	
02-12-22	3.2	5.4	11.1	9.5	9.4	9.2	-	1467.7	2226.3	
05-12-22	0.1	0.2	0.02	0.1	0.05	0.05	-	-	-	
05-12-22	0.6	3.0	10.4	8.0	7.9	7.8	-	1467.7	2226.3	
13-12-22	0.4	0.4	0.1	0.2	0.2	0.2	-	-	-	

	20-03-23	6.8	7.5	6.8	7.6	7.5	7.5	-	1689.4	2004.5
	23-03-23	0.4	0.5	0.6	0.7	0.6	0.6	-	-	-
P1 Grisegylle	17-06-22	15.7	19.4	16.1	17.9	18.6	19.2	-	2924.7	769.3
	21-06-22	0.6	1.2	0.04	0.7	1.0	1.1	-	-	-
	07-07-22	14.6	18.4	18.2	18.3	17.9	18.2	-	2671.3	1022.7
	08-07-22	0.7	1.8	0.1	0.03	1.3	1.5	-	-	-
	10-07-22	14.5	18.9	18.3	18.3	18.0	18.5	-	2671.3	1022.7
	12-07-22	1.0	2.5	0.1	0.03	1.9	2.2	-	-	-
	12-07-22	16.4	21.6	18.5	18.4	20.4	21.0	-	2671.3	1022.7
	18-07-22	0.7	1.4	0.02	0.02	1.0	1.2	-	-	-
	18-08-22	18.5	23.5	18.8	18.6	23.7	23.1	-	2101.2	1592.8
	19-08-22	0.9	1.7	0.02	0.00	0.6	1.4	-	-	-
	23-08-22	18.1	20.3	18.9	18.7	22.1	20.4	-	2101.2	1592.8
	24-08-22	0.7	0.8	0.02	0.01	0.6	0.8	-	-	-
	23-09-22	11.2	13.8	16.6	16.1	16.2	13.8	-	2037.9	1656.1
	28-09-22	0.5	0.8	0.01	0.05	0.05	0.7	-	-	-
	28-09-22	11.8	13.2	15.9	15.2	15.3	13.3	-	1942.8	1751.2
	04-10-22	0.4	0.5	0.1	0.03	0.03	0.4	-	-	-
	19-10-22	11.2	11.8	14.4	13.3	13.4	11.8	-	1942.8	1751.2
	23-10-22	0.6	0.6	0.01	0.02	0.02	0.5	-	-	-
	24-10-22	12.9	13.3	14.1	13.3	13.3	13.2	-	1942.8	1751.2
	29-10-22	0.3	0.4	0.01	0.01	0.01	0.3	-	-	-
	30-11-22	2.0	3.2	11.5	8.2	8.2	3.6	-	1942.8	1751.2
	03-12-22	0.1	0.2	0.02	0.04	0.04	0.2	-	-	-
	03-12-22	0.6	1.8	10.9	8.0	7.9	2.2	-	1657.8	2036.2
12-12-22	0.2	0.3	0.1	0.04	0.04	0.3	-	-	-	
31-03-23	-	-	-	-	-	-	-	1277.7	2416.3	
03-04-23	-	-	-	-	-	-	-	-	-	
C1 Kvæggylle	12-09-22	15.1	15.5	17.4	15.3	15.4	15.7	-	5818.0	1874.4
	14-09-22	1.2	1.0	0.02	0.8	0.9	1.0	-	-	-
	14-09-22	13.9	15.5	17.3	15.5	15.4	15.7	-	5818.0	1874.4
	15-09-22	1.5	1.6	0.02	1.3	1.6	1.7	-	-	-
	16-09-22	14.2	14.5	16.9	16.4	14.2	14.6	-	5371.5	2320.9
	20-09-22	1.2	1.1	0.02	0.4	1.0	1.1	-	-	-
	20-09-22	14.0	15.7	16.7	16.6	15.1	15.8	-	5371.5	2320.9
	22-09-22	1.4	1.4	0.01	0.1	1.2	1.4	-	-	-
	17-11-22	-	-	-	-	-	-	-	4311.1	3381.4
	18-11-22	-	-	-	-	-	-	-	-	-
	21-11-22	-	-	-	-	-	-	-	4311.1	3381.4
	23-11-22	-	-	-	-	-	-	-	-	-
	23-11-22	-	-	-	-	-	-	-	4031.9	3660.5
	25-11-22	-	-	-	-	-	-	-	-	-
	28-11-22	-	-	-	-	-	-	-	4031.9	3660.5
	30-11-22	-	-	-	-	-	-	-	-	-
	31-01-23	2.5	2.3	7.4	7.2	6.4	2.4	-	2971.5	4720.9
05-02-23	0.4	0.4	0.02	0.01	0.02	0.4	-	-	-	

	06-02-23	5.9	5.4	7.2	7.1	6.1	5.4	-	2971.5	4720.9
	08-02-23	0.4	0.4	0.01	0.01	0.01	0.4	-	-	-
	06-04-23	-	-	-	-	-	-	-	3641.2	4051.2
	07-04-23	-	-	-	-	-	-	-	-	-
	08-04-23	-	-	-	-	-	-	-	3641.2	4051.2
	09-04-23	-	-	-	-	-	-	-	-	-
	11-04-23	-	-	-	-	-	-	-	3641.2	4051.2
	13-04-23	-	-	-	-	-	-	-	-	-
	14-04-23	-	-	-	-	-	-	-	3641.2	4051.2
	15-04-23	-	-	-	-	-	-	-	-	-
	25-05-23	17.8	18.8	10.5	17.7	18.3	19.1	-	5963.1	1729.3
	30-05-23	1.407	1.162	0.003	0.961	1.107	1.236	-	-	-
AD1 Afgasset gylle	28-07-22	20.1	22.1	22.1	21.0	21.1	21.2	21.6	6045.7	1017.7
	31-07-22	0.9	1.2	0.1	0.9	0.9	1.1	1.2	-	-
	01-08-22	19.1	21.0	23.6	20.3	20.3	20.3	20.6	5952.2	1111.1
	05-08-22	0.8	1.0	0.2	0.8	0.8	0.9	1.0	-	-
	05-08-22	17.6	20.8	23.3	20.3	20.2	20.2	20.4	5690.5	1372.9
	10-08-22	0.6	0.9	0.1	0.7	0.7	0.8	0.9	-	-
	06-10-22	11.8	13.5	24.0	24.4	23.9	13.1	13.1	4120.0	2943.4
	09-10-22	0.6	0.8	0.03	0.03	0.04	0.7	0.8	-	-
	11-10-22	11.0	12.6	23.8	24.0	23.6	12.3	12.3	4101.3	2962.1
	13-10-22	0.5	0.8	0.03	0.04	0.1	0.7	0.8	-	-
	13-10-22	12.7	14.4	23.5	23.7	23.2	14.1	14.0	4082.6	2980.8
	16-10-22	0.4	0.6	0.03	0.04	0.04	0.6	0.6	-	-
	19-12-22	6.5	6.9	17.7	17.9	15.2	14.3	6.6	3418.8	1355.5
	21-12-22	0.3	0.4	0.04	0.04	0.02	0.03	0.3	-	-
	23-12-22	3.8	4.1	17.4	17.6	14.3	14.0	3.9	3418.8	1355.5
	26-12-22	0.7	0.8	0.03	0.02	0.1	0.02	0.8	-	-
	27-12-22	6.2	6.5	16.7	17.1	14.2	13.3	6.2	3418.8	1355.5
	29-12-22	0.1	0.1	0.01	0.02	0.01	0.02	0.1	-	-
	28-02-23	3.5	4.1	13.0	12.9	9.4	9.7	3.8	3259.9	3803.4
	05-03-23	0.7	1.0	0.02	0.03	0.04	0.03	1.0	-	-
02-03-23	2.3	2.8	12.8	12.7	9.1	9.6	2.4	3231.9	3831.5	
05-03-23	0.8	1.0	0.02	0.03	0.02	0.03	1.0	-	-	
04-05-23	9.1	10.5	12.2	9.8	9.9	10.0	10.1	5681.1	1382.2	
06-05-23	0.6	0.8	0.01	0.5	0.6	0.7	0.8	-	-	
AD2 Afgasset biomasse	26-08-22	19.0	21.0	21.3	22.6	21.2	21.2	-	1938.8	1688.0
	28-08-22	1.0	1.2	0.01	0.04	1.0	1.2	-	-	-
	29-08-22	19.1	21.5	21.3	22.2	21.3	21.5	-	1845.1	1781.7
	30-08-22	1.5	1.9	0.02	0.03	1.6	1.8	-	-	-
	31-08-22	17.1	19.3	21.1	22.3	19.5	19.3	-	1751.4	1875.4
	03-09-22	0.8	1.0	0.02	0.1	0.9	1.0	-	-	-
	01-11-22	10.6	16.5	14.7	17.0	10.9	14.1	-	1126.8	2500.0
	03-11-22	0.3	0.05	0.1	0.03	0.4	0.2	-	-	-
05-11-22	11.4	16.2	14.5	16.8	11.9	14.6	-	1126.8	2500.0	
07-11-22	0.4	0.03	0.1	0.04	0.3	0.1	-	-	-	

08-11-22	12.0	15.9	14.5	16.4	12.0	14.5	-	1126.8	2500.0
09-11-22	0.3	0.1	0.1	0.03	0.4	0.2	-	-	-
31-12-22	7.7	7.5	7.6	8.3	12.2	7.2	-	1126.8	2500.0
01-01-23	0.3	0.1	0.2	0.03	0.2	0.1	-	-	-
02-01-23	5.7	7.7	8.4	8.7	10.2	6.6	-	1126.8	2500.0
04-01-23	0.5	0.1	0.1	0.03	0.4	0.1	-	-	-
05-01-23	6.3	7.7	8.6	9.0	10.7	6.9	-	1126.8	2500.0
07-01-23	0.3	0.05	0.1	0.1	0.3	0.1	-	-	-
10-01-23	6.8	7.6	9.0	9.6	11.4	7.0	-	1126.8	2500.0
11-01-23	0.2	0.0	0.02	0.01	0.2	0.0	-	-	-
17-03-23	8.5	6.4	7.7	7.2	7.7	6.8	-	1126.8	2500.0
20-03-23	0.3	0.1	0.01	0.1	0.3	0.2	-	-	-
20-03-23	7.1	7.0	7.8	7.3	6.3	6.8	-	1126.8	2500.0
22-03-23	0.4	0.0	0.003	0.01	0.4	0.1	-	-	-
20-03-23	7.1	7.0	7.8	7.3	6.3	6.8	-	1126.8	2500.0
22-03-23	0.4	0.04	0.003	0.01	0.4	0.1	-	-	-
20-04-23	-	-	-	-	-	-	-	3375.3	251.5
22-04-23	-	-	-	-	-	-	-	-	-
24-04-23	-	-	-	-	-	-	-	3375.3	251.5
27-04-23	-	-	-	-	-	-	-	-	-

**Tabel A3.** Sekundære parametre hentet fra nærmeste vejrstation. 95%-konfidensintervaller er angivet med grå tekst.

	Periode start/slut	AirTemp (°C)	AirRh (%)	GloRad	Wind-Speed m s <sup>-1</sup>	WindDir (degr.)	SoilTemp (°C)
AC1 Sommerforsuring	18-06-22	13.7	79.0	0.9	2.9	254.2	14.9
	21-06-22	0.6	2.9	0.2	0.3	12.9	0.2
	05-07-22	13.2	78.9	0.9	4.3	259.2	15.2
	06-07-22	1.1	6.3	0.4	0.6	8.4	0.2
	08-07-22	13.2	79.1	0.8	4.2	288.1	15.0
	11-07-22	0.8	3.6	0.3	0.5	4.4	0.2
	11-07-22	17.2	79.4	0.9	4.1	243.9	16.7
	13-07-22	0.8	4.6	0.3	0.5	8.0	0.2
	18-07-22	20.6	64.6	1.0	3.1	182.7	17.5
	19-07-22	1.5	6.1	0.3	0.5	14.6	0.3
	18-08-22	16.2	81.2	0.6	2.3	196.9	17.3
	23-08-22	1.0	4.6	0.2	0.4	27.1	0.3
	23-08-22	18.1	74.6	0.5	3.6	111.0	16.7
	24-08-22	1.0	4.1	0.2	0.3	25.4	0.3
	23-09-22	10.7	90.4	0.3	2.5	248.2	12.2
	26-09-22	0.7	3.4	0.1	0.4	15.0	0.2
28-09-22	11.1	89.2	0.3	3.9	189.2	11.8	
04-10-22	0.3	1.4	0.1	0.3	16.8	0.1	
19-10-22	10.1	94.4	0.2	2.9	127.5	10.4	

	24-10-22	0.6	1.7	0.1	0.3	6.7	0.2
	24-10-22	11.7	94.9	0.1	3.7	204.2	11.7
	26-10-22	0.5	1.2	0.1	0.4	9.9	0.1
	02-12-22	2.3	89.1	0.0	4.8	46.5	4.6
	05-12-22	0.2	0.7	0.0	0.2	2.2	0.1
	05-12-22	-1.8	92.2	0.1	2.3	151.1	2.6
	13-12-22	0.6	1.5	0.0	0.2	21.1	0.2
	20-03-23	6.6	93.8	0.2	4.7	208.7	6.4
	23-03-23	0.4	1.4	0.1	0.5	9.6	0.1
P1 Grisegylle	17-06-22	13.8	80.2	0.9	3.3	257.8	14.8
	21-06-22	0.5	2.2	0.2	0.2	8.3	0.1
	07-07-22	13.2	83.6	0.6	4.3	283.1	15.1
	08-07-22	0.7	3.5	0.2	0.4	6.6	0.2
	10-07-22	12.6	78.6	0.8	4.3	291.0	14.9
	12-07-22	0.9	4.0	0.3	0.6	5.0	0.2
	12-07-22	14.9	75.3	0.9	5.1	266.7	15.8
	18-07-22	0.6	2.3	0.2	0.3	5.0	0.2
	18-08-22	16.2	91.8	0.4	2.1	212.7	17.5
	19-08-22	0.7	1.8	0.2	0.3	53.8	0.3
	23-08-22	18.0	76.0	0.5	3.6	111.3	16.6
	24-08-22	1.0	4.8	0.3	0.4	5.9	0.3
	23-09-22	10.3	91.2	0.3	2.4	250.1	12.1
	28-09-22	0.4	2.0	0.1	0.3	8.7	0.1
	28-09-22	11.5	89.7	0.3	4.1	191.9	11.9
	04-10-22	0.3	1.3	0.1	0.3	15.2	0.1
	19-10-22	10.2	94.4	0.2	3.0	129.2	10.5
	23-10-22	0.6	1.6	0.1	0.3	6.7	0.2
	24-10-22	12.8	95.1	0.1	3.2	199.7	12.1
	29-10-22	0.3	0.8	0.0	0.2	5.5	0.1
30-11-22	0.6	91.9	0.1	3.4	137.7	3.7	
03-12-22	0.2	0.7	0.0	0.2	2.3	0.1	
03-12-22	-1.6	92.7	0.1	2.4	156.5	2.5	
12-12-22	0.3	0.9	0.0	0.1	11.9	0.1	
31-03-23	2.9	68.9	0.7	4.1	85.3	5.3	
03-04-23	0.7	4.0	0.2	0.5	14.7	0.3	
C1 Kvæggylle	12-09-22	14.0	83.3	0.3	5.1	256.1	14.8
	14-09-22	0.4	2.6	0.2	0.6	10.1	0.1
	14-09-22	12.9	81.4	0.4	4.6	265.3	14.4
	15-09-22	0.9	3.4	0.2	0.5	3.8	0.2
	16-09-22	10.8	82.2	0.5	3.4	288.4	13.0
	20-09-22	0.7	2.4	0.1	0.3	15.2	0.2
	20-09-22	9.5	80.0	0.6	1.8	131.0	11.8
	22-09-22	1.0	3.6	0.1	0.2	17.4	0.2
	17-11-22	1.4	81.6	0.1	4.3	129.5	5.9
18-11-22	0.6	2.3	0.0	0.5	26.9	0.2	
21-11-22	1.6	95.9	0.1	4.3	118.0	4.8	

	23-11-22	0.5	0.7	0.0	0.5	10.5	0.1
	23-11-22	6.2	97.0	0.0	3.8	141.7	6.6
	25-11-22	0.2	0.5	0.0	0.2	3.0	0.1
	28-11-22	4.1	93.6	0.0	3.7	81.4	6.3
	30-11-22	0.1	0.3	0.0	0.2	5.0	0.0
	31-01-23	1.8	89.1	0.2	3.4	195.7	2.5
	05-02-23	0.3	1.6	0.0	0.2	12.8	0.1
	06-02-23	6.3	90.0	0.1	5.6	261.0	4.5
	08-02-23	0.3	1.4	0.0	0.4	3.5	0.2
	06-04-23	5.8	67.4	0.7	4.4	78.2	6.1
	07-04-23	0.8	4.7	0.2	0.4	7.2	0.3
	08-04-23	8.2	71.1	0.5	4.1	136.8	7.7
	09-04-23	0.8	3.8	0.2	0.5	10.7	0.2
	11-04-23	6.4	83.1	0.4	4.0	139.5	7.5
	13-04-23	0.5	2.6	0.1	0.4	8.8	0.2
	14-04-23	9.3	77.2	0.6	2.9	69.6	8.8
	15-04-23	0.6	3.6	0.2	0.3	21.4	0.2
	25-05-23	10.8	69.9	1.1	4.3	281.7	12.9
	30-05-23	0.7	2.9	0.2	0.3	10.4	0.2
AD1 Afgasset gylle	28-07-22	15.5	82.1	0.6	2.1	180.3	16.6
	31-07-22	0.8	3.6	0.2	0.2	18.1	0.3
	01-08-22	16.3	88.2	0.4	3.4	212.6	16.7
	05-08-22	1.0	2.8	0.1	0.3	11.1	0.3
	05-08-22	14.5	81.1	0.6	2.7	247.8	16.1
	10-08-22	0.6	2.5	0.1	0.3	9.2	0.2
	06-10-22	10.7	87.0	0.3	4.4	207.3	11.9
	09-10-22	0.6	1.7	0.1	0.4	7.6	0.2
	11-10-22	9.4	90.7	0.2	2.7	182.7	10.7
	13-10-22	0.6	1.9	0.1	0.3	9.6	0.1
	13-10-22	11.1	91.0	0.2	3.2	186.2	11.3
	16-10-22	0.5	2.2	0.1	0.3	9.4	0.1
	19-12-22	5.5	98.1	0.0	4.3	211.4	3.1
	21-12-22	0.4	0.3	0.0	0.2	5.4	0.2
	23-12-22	2.6	97.6	0.0	2.8	144.4	2.7
	26-12-22	0.8	1.1	0.0	0.2	14.4	0.2
	27-12-22	5.9	92.9	0.0	6.0	203.3	4.5
	29-12-22	0.4	0.9	0.0	0.4	5.1	0.2
	28-02-23	2.1	88.5	0.4	2.1	266.7	3.0
	05-03-23	0.8	3.7	0.1	0.4	22.9	0.2
02-03-23	0.6	69.2	0.4	3.8	295.7	2.8	
05-03-23	1.0	3.8	0.1	0.6	11.1	0.2	
04-05-23	6.9	65.8	0.6	7.2	97.7	8.0	
06-05-23	0.5	3.1	0.2	0.5	1.9	0.1	
AD2 Af-gasset biomasse	26-08-22	16.4	87.3	0.4	3.1	292.2	17.6
	28-08-22	0.6	2.3	0.1	0.2	16.4	0.2
	29-08-22	15.0	67.6	0.9	3.0	59.1	16.3

30-08-22	1.1	4.9	0.2	0.4	24.5	0.3
31-08-22	15.2	69.8	0.7	3.6	85.9	15.5
03-09-22	0.7	3.0	0.1	0.3	3.8	0.1
01-11-22	10.7	89.4	0.1	5.2	163.8	11.4
03-11-22	0.3	1.2	0.0	0.3	7.5	0.1
05-11-22	10.5	93.2	0.1	4.8	196.3	10.4
07-11-22	0.3	1.1	0.1	0.3	4.9	0.1
08-11-22	11.3	90.4	0.1	5.0	204.8	10.8
09-11-22	0.4	1.4	0.0	0.4	4.4	0.1
31-12-22	7.5	94.8	0.0	4.5	182.8	5.8
01-01-23	0.4	1.8	0.0	0.7	21.9	0.1
02-01-23	5.2	91.7	0.1	5.5	237.6	5.2
04-01-23	0.5	1.3	0.0	0.5	12.8	0.2
05-01-23	5.9	94.3	0.0	4.2	180.4	5.4
07-01-23	0.4	0.7	0.0	0.2	6.3	0.1
10-01-23	6.7	91.0	0.1	6.2	201.6	5.4
11-01-23	0.2	0.7	0.0	0.3	4.4	0.1
17-03-23	7.7	94.4	0.2	2.6	189.0	5.9
20-03-23	0.3	1.7	0.1	0.3	13.1	0.2
20-03-23	6.4	95.0	0.1	4.4	206.4	6.3
22-03-23	0.4	0.8	0.0	0.5	10.1	0.1
20-03-23	6.4	95.0	0.1	4.4	206.4	6.3
22-03-23	0.4	0.8	0.0	0.5	10.1	0.1
20-04-23	10.7	11.6	0.1	0.8	4.3	127.0
22-04-23	0.9	0.9	0.1	0.2	0.3	13.2
24-04-23	5.6	6.3	0.1	0.6	6.5	276.1
27-04-23	0.6	0.6	0.1	0.2	0.4	5.2