

TABLE 1.  
*Carbohydrates. Themeda triandra.*

Date.	Remarks.	Dry Matter, in %.	Water soluble reducing bodies, chiefly Glucose, in %.	Water soluble bodies reducing Fehling after Hydrolysis, in %.	Residue treated with Amylase "Starch", in %.	Residue II treated with dilute Acid after elimination of Starch, chiefly Hemicellulose, in %.
27. 11. 23	Fresh.....	44.7	2.6	1.9	9.4	
5. 12. 23	Wilted.....	62.4	2.0	1.7	1.3	
12. 12. 23	Rather dry.....	54.0	2.8	0.0	2.2	
18. 12. 23	Grass from another place of the farm, nearly fresh	55.0	0.4	1.6	6.7	
27. 12. 23	Dry but still green.....	59.0	2.7	0.9	0.0	
2. 1. 24	Dry, but green.....	60.4	1.8	0.8	0.0	
9. 1. 24	Dry, but green.....	61.4	3.4	1.8	1.3	
16. 1. 24	Rather dry, but green.....	53.2	1.9	2.0	0.0	
23. 1. 24	Rather dry, but green.....	55.8	2.1	2.2	0.3	
30. 1. 24		47.9	2.0	1.9	0.0	
6. 2. 24	Dry, but green.....	79.4	1.0	2.6	1.0	
16. 2. 24		48.0	0.8	1.3	1.1	
5. 3. 24	After rain and sky overcast.....	48.6	1.2	1.3	1.2	
12. 3. 24	Fresh.....	38.7	1.3	0.6	about 5.0	
20. 3. 24	Fresh.....	38.8	2.8	0.9	4.7	
1. 4. 24	Fresh.....	42.0	0.7	1.5	7.8	
8. 4. 24	Withered, young leaves.....	22.6	1.7	0.0	0.8	
14. 4. 24	Rather dry.....	40.6	1.2	3.0	1.1	
23. 4. 24		38.4				21.8
28. 4. 24		42.2	1.5	2.9	1.7	
13. 5. 24		49.0	1.0	2.7	0.4	
20. 5. 24	After heavy rain.....	44.8	3.1	0.6	3.7	
26. 5. 24		51.0	1.9	2.3	3.5	
17. 6. 24	Brown leaves.....	92.0	0.1	0.7	0.0	13.6
	Green leaves.....	50.0	2.0	0.8	0.4	32.8
29. 7. 24	Brown leaves.....	91.8	0.6	0.5	0.0	48.1
7. 8. 24	Young leaves, very short, before elongation	8.6	2.1	3.1	3.5	20.4
25. 8. 24	Much more leaves. Elongated.....	47.0	3.5	1.2	7.3	30.2
17. 9. 24	Folded.....	50.0	0.9	1.9	4.3	11.8
27. 9. 24	Fresh.....	42.0	1.9	1.2	8.2	16.0
21. 10. 24	Rather dry in the last days, fresh when gathered	36.0	2.4	1.6	4.2	5.1
29. 11. 24	Rather dry.....	48.0	1.7	1.9	0.3	14.5
20. 3. 25	Fresh.....	38.8	2.8	0.9	4.7	
13. 4. 25	Fresh.....	45.6	1.6	1.6	2.7	20.6
10. 6. 25	Green leaves.....	52.0	2.5	0.7	0.5	18.1

TABLE 2.  
*Carbohydrates. Eragrostis superba.*

Date.	Remarks.	Dry Matter, in %.	Water soluble reducing bodies, chiefly Glucose, in %.	Water soluble bodies reducing Fehling after Hydrolysis, chiefly Disaccharides, in %.	Residue treated with Amylase " Starch," in %.	Residue II after elimination of Starch treated with weak Acid, chiefly Hemicellulose, in %.
7. 5.24		40.0			0.49	
13. 8.24	Leaves fresh.....	38.0	2.9	0.6	10.2	7.0
12. 9.24	Leaves not so fresh as in August, but turgescient	37.0	1.8	0.2	3.3	26.8
24. 9.24	Leaves gathered after rain, fresh; but sky overcast, probably too dark for assimilation	34.0	0.9	1.3	1.8	25.9
28.10.24	Leaves rolled. Dry.....	40.0	0.6	2.7	1.5	20.7
30.10.24	Leaves fresh. Gathered after rain.	42.0	1.1	2.8	4.5	19.4
24.12.24		38.0	1.1	0.0	4.6	22.6
27. 1.25	Rolled and withered leaves.....	50.0	3.2	1.4	0.0	11.6
21. 2.25		43.0	1.3	0.5	3.35	22.4
23. 3.25		38.0	0.7	0.7	2.9	18.9
4. 5.25	Leaves fresh.....	40.0	0.9	1.1	4.6	20.8
29. 5.25	Leaves red.....	50.0	2.3	1.1	1.15	18.5
18. 6.25		48.0	3.0	1.2	0.2	20.7
25. 6.25	Brown leaves.....	100.0	0.9	0.5	0.0	26.2

TABLE 3.  
*Carbohydrates. Aristida uniplumis.*

Date.	Remarks.	Dry Matter, in %.	Water soluble reducing bodies, chiefly Glucose, in %.	Water soluble bodies reducing Fehling after Hydrolysis, chiefly Disaccharides, in %.	Residue treated with Amylase " Starch," in %.	Residue II treated with dilute Acid after elimination of Starch, in %.
30. 8.24	Rolled.....	50.0	0.9	0.4	9.3	14.9
7.10.24	Rolled.....	38.0	1.9	0.6	2.9	8.6
7.11.24	After rain.....	60.0	1.3	1.7	2.9	13.7
9.12.24	After heavy rain. Morning partly cloudy	* 55.0	0.7	1.9	0.4	10.5
15. 1.25	Rolled.....	57.0	1.0	1.5	1.5	19.0
12. 2.25		52.0	0.8	3.6	4.5	13.8
2. 3.25	Fresh.....	52.0	1.8	1.0	3.0	19.1
30. 3.25	Few green leaves.....	56.0	0.4	1.4	1.6	10.7

TABLE 4.  
*Carbohydrates. Chrysopogon serrulatus.*

Date.	Remarks.	Dry Matter, in %.	Water soluble reducing bodies, chiefly Glucose, in %.	Water soluble bodies reducing Fehling after Hydrolysis, chiefly Disaccharides, in %.	Residue treated with Amylase ' Starch' in %.	Residue II after elimination of Starch treated with dilute Acid, chiefly Hemicellulose, in %.
20. 9. 24	Leaves folded and partly sunk in, the drought appearance of the grass	35.0	1.5	0.0	0.2	14.8
14.10. 24	Folded, but fresh.....	34.0	1.9	0.6	3.0	11.3
25.11. 24	Leaves looking white-green.....	40.0	1.4	0.3	5.9	12.9
7. 1. 25	Folded and dry.....	42.0	1.0	0.4	0.4	9.0
5. 2. 25		53.0	1.7	1.3	2.0	17.2
23. 2. 25	Dry.....	45.0	2.0	1.0	0.9	12.7
16. 3. 25	Fresh.....	36.0	2.9	0.0	2.2	11.7
20. 4. 25	Fresh.....	38.0	2.2	0.0	1.4	13.0
19. 5. 25	Leaves fresh, but apex dry, plant dying down after frost	35.0	2.2	3.1	0.0	15.7
3. 6. 25	Leaves open, apex brown, dry. Separated for special analysis	38.0	1.8	2.6	1.3	19.9
	Dry apex.....	88.0	0.5	0.9	0.0	18.5

TABLE 5.  
*Carbohydrates. Digitaria eriantha.*

Date.	Remarks.	Dry Matter, in %.	Water soluble reducing bodies, chiefly Glucose, in %.	Water soluble bodies reducing Fehling after hydrolysis, chiefly disaccharides, in %.	Residue treated with Amylase, ∴ Starch, in %.	Residue II treated with dilute Acid after elimination of Starch, in %.
19. 2.24	Leaves nearly fresh (a).....	34.0	0.8	1.3	1.3	
19. 2.24	Leaves dry (b).....	52.8	0.3	0.8	0.0	
21. 2.24	Watered plant (c).....	34.4	0.8	0.7	2.1	
23. 2.24	Plant (b) fresher than (a) because near windmill					(a) 16.5 (b) 17.8
26. 3.24	Fresh.....	27.4	0.5	0.6	2.5	
6. 5.24	Plant dying down.....	29.8	1.6	1.3	0.6	
23. 5.24	Brown leaves.....	63.0	0.5	0.2	0.0	
29. 5.24	Brown leaves, same material as day before	63.0				19.5
1. 8.24	Brown leaves.....	97.0	1.0	0.2	0.0	14.4
18. 8.24	New green leaves before elongation	30.0	0.7	1.3	6.7	8.4
8. 9.24	For the first time in the season the leaves were not quite turgescient	26.0	1.2	0.8	11.1	15.7
1.10.24	Fresh.....	21.0	0.0	2.2	14.3	10.2
17.10.24	Not so fresh as in the previous analysis, but still good	30.0	0.9	0.3	6.8	20.0
17.11.24	Fresh.....	27.0	1.1	2.2	13.2	25.9
20.12.24	Fresh.....	23.0	1.7	0.0	8.7	17.6
19. 1.25	Withered.....	52.0	1.4	1.8	2.1	33.7
10. 3.25	After rain.....	28.0	1.2	1.3	2.8	13.9
6. 4.25	Dry.....	30.0	1.2	0.3	1.3	12.8
11. 5.25	After frost.....	35.0	1.5	0.5	0.5	11.1

TABLE 6.  
*Dry Matter and Total Amount of Assimilation Products of the Investigated Grasses.*

<i>Themeda triandra.</i>			<i>Digitaria eriantha.</i>			<i>Chrysopogon serrulatus.</i>			<i>Eragrostis superba.</i>			<i>Aristida uniplumis.</i>		
Date.	Dry Matter in %.	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %.	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %.	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %.	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %.	Assimilation Products in % of Dry Matter.
27.11.23	44.7	12.0	19. 2.24	34.0	3.4	19. 9.24	35.0	1.7	13. 8.24	38.0	12.8	30. 8.24	50.0	9.7
5.12.23	62.4	4.9		52.8	1.7	14.10.24	34.0	5.2	12. 9.24	37.0	5.0	7.10.24	38.0	5.2
12.12.23	54.0	4.8		34.4	3.4	25.11.24	40.0	7.1	24. 9.24	34.0	4.0	7.11.24	60.0	5.7
18.12.23	55.0	8.1	26. 3.24	27.4	3.4	7. 1.25	42.0	1.8	28.10.24	40.0	4.7	7.12.24	55.0	3.0
27.12.23	59.0	3.6	6. 5.24	29.8	3.5	9. 2.25	53.0	4.8	30.10.24	42.0	8.0	13. 1.25	57.0	3.9
2. 1.24	60.4	2.6	18. 8.24	30.0	8.1	23. 2.25	45.0	3.8	24.12.24	38.0	5.3	12. 2.25	52.0	8.5
9. 1.24	61.4	6.4	8. 9.24	26.0	12.0	16. 3.25	36.0	4.9	27. 1.25	50.0	5.6	2. 3.25	52.0	5.5
16. 1.24	53.2	3.9	1.10.24	21.0	15.1	20. 4.25	38.0	3.5	21. 2.25	43.0	4.9	30. 3.25	56.0	3.3
23. 1.24	55.8	4.6	17.10.24	30.0	7.4	19. 5.25	35.0	5.3	23. 3.25	38.0	4.1			
30. 1.24	47.9	3.9	17.11.24	27.0	15.2	3. 6.25	38.0	5.6	4. 5.25	40.0	6.2			
6. 2.24	79.4	4.5	20.12.24	23.0	9.6				29. 5.25	50.0	4.5			
16. 2.24	48.0	3.1	19. 1.25	52.0	5.1				18. 6.25	48.0	4.4			
5. 3.24	48.6	3.6	10. 3.25	28.0	5.1									
20. 3.24	38.8	8.0	6. 4.25	30.0	2.7									
1. 4.24	42.0	9.3	11. 5.25	35.0	2.5									
8. 4.24	22.6	2.4												
14. 4.24	40.6	5.2												

TABLE 6—(continued).

<i>Themeda triandra.</i>			<i>Digitaria eriantha.</i>			<i>Chrysopogon serrulatus.</i>			<i>Eragrostis superba.</i>			<i>Aristida uniplumis.</i>		
Date.	Dry Matter in %	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %	Assimilation Products in % of Dry Matter.	Date.	Dry Matter in %	Assimilation Products in % of Dry Matter.
28. 4.24	41.2	6.0												
13. 5.24	49.0	4.1												
20. 5.24	44.8	7.1												
26. 5.24	51.0	7.4												
17. 6.24	50.0	3.2												
7. 8.24	48.6	8.4												
25. 8.24	47.0	11.3												
17. 9.24	50.0	6.7												
27. 9.24	42.0	10.5												
21.10.24	36.0	7.8												
29.10.24	48.0	4.0												
13. 4.25	45.0	5.5												
10. 6.25	52.0	3.6												

TABLE 7.

*Total Analyses of Themeda triandra in Percentage of Stove-dry Material.*

Date.	Ash.	Crude Protein.	Ether Extract.	Crude Fibre.	Carbohydrates : Difference from 100 %.	Carbohydrates soluble in 1.4 % HCl after removal of Starch.	Carbohydrates soluble in 1.25 % H <sub>2</sub> SO <sub>4</sub> and 1.25 % NaOH. Not soluble in 1.4 % HCl.	Remarks.
29. 7.24	10.1	4.5	3.4	31.4	50.6	48.1	1.4	Brown leaves.
3. 9.24	8.3	11.2	3.1	27.0	50.4	20.4	21.7	Fresh.
16. 9.24	6.9	10.3	2.6	27.0	53.2	11.8	34.7	Folded, rather dry.
25. 9.24	7.2	11.3	4.4	25.7	51.4	16.0	24.9	Fresh.
21.10.24	7.2	8.3	3.9	27.4	53.2	5.1	40.3	Rather dry.
29.11.24	6.8	7.9	3.4	30.3	51.6	14.5	36.1	Rather dry.
20. 3.25	7.6	11.3	3.3	29.7	49.2			Fresh.
13. 4.25	10.0	9.0	3.8	27.4	49.8	20.6	23.7	Fresh.
10. 6.25	7.4	5.5	3.2	30.4	53.5	18.1	29.8	Green leaves.

TABLE 8.

*Total Analyses of Eragrostis superba in Percentage of Stove-dry Material.*

Date.	Ash.	Crude Protein.	Ether Extract.	Crude Fibre.	Carbohydrates : Difference from 100 %.	Carbohydrates soluble in 1.4 % hydrochloric acid after removal of starch.	Carbohydrates soluble in 1.25 % sulphuric acid and 1.25 % sodiumhydroxide, not soluble in 1.4 % HCl.	Remarks.
22. 8.24	5.7	3.0	1.1	21.7	68.5			Brown leached leaves.
12. 9.24	5.7	12.1	2.5	28.0	51.7	26.8	19.9	
24. 9.24	8.0	7.8	2.6	26.9	54.7	25.9	24.8	Roots better developed.
28.10.24	7.3	12.3	3.4	21.6	55.4	20.7	30.0	Rather dry before rain.
30.10.24	8.2	9.2	3.1	23.6	55.9	19.4	28.5	After rain.
23.12.24	7.6	12.3	3.7	27.9	48.5	22.6	20.6	
27. 1.25	8.1	5.1	3.2	31.0	52.6	11.6	35.4	In drought period wilted.
21. 2.25	8.1	12.5	3.7	27.2	48.5	22.4	21.2	
23. 3.25	8.2	15.4	3.9	27.3	45.2	18.9	23.2	
4. 5.25	9.8	11.2	4.5	23.8	50.7	20.8	23.7	Fresh.
29. 5.25	8.2	4.7	3.2	31.1	52.8	18.5	29.8	Brown leaves.
25. 6.25	10.7	4.6	1.7	30.8	52.2	20.7	27.1	Brown leaves.

TABLE 9.

*Total Analyses of Aristida uniplumis in Percentage of Stove-dry Material.*

Date.	Ash.	Crude Protein.	Ether Extract.	Crude Fibre.	Carbohydrates. Difference from 100%.	Carbohydrates soluble in 1.4% HCl after removal of Starch.	Carbohydrates soluble in 1.25% H <sub>2</sub> SO <sub>4</sub> and 1.25% NaOH, not soluble in 1.4% HCl.	Remarks.
7.10.24	6.4	9.8	1.9	44.0	37.9	8.6	24.1	Rolled leaves.
7.11.24	6.3	9.5	2.5	43.1	38.6	13.7	19.2	After rain.
10.12.24	5.9	8.6	2.2	39.5	43.8	10.5	30.3	After heavy rain.
13. 1.25	5.9	7.0	1.9	38.3	46.9	19.0	24.0	Rolled leaves.
13. 2.25	6.6	8.0	3.6	39.0	42.8	13.8	20.5	
2. 3.25	6.7	7.2	2.9	42.1	41.1	19.1	16.5	Fresh.
30. 3.25	6.9	8.1	2.6	53.9	28.5	10.7	14.5	Few green leaves.

TABLE 10.

*Total Analyses of Chrysopogon serrulatus in Percentage of Stove-dry Material.*

Date.	Ash.	Crude Protein.	Ether Extract.	Crude Fibre.	Carbohydrates : Difference from 100%.	Carbohydrates soluble in 1.4% HCl after removal of Starch.	Carbohydrates soluble in 1.25% H <sub>2</sub> SO <sub>4</sub> and 1.25% NaOH, not soluble in 1.4% HCl.	Remarks.
19. 9.24	9.9	12.8	3.5	24.2	49.6	14.8	33.1	Leaves in drought position.
14.10.24	8.1	13.3	5.8	27.9	44.9	11.3	28.4	Fresher.
25.11.24	10.8	9.4	5.7	27.7	46.4	12.9	26.4	Leaves white-green.
7. 1.25	8.7	8.6	6.9	27.9	47.9	9.0	37.1	Dry.
5. 2.25	8.8	9.7	5.9	27.6	48.0	17.2	26.0	
23. 2.25	8.0	8.6	5.6	27.4	50.4	12.7	33.5	Dry.
16. 3.25	9.9	10.7	6.0	28.6	44.8	11.7	28.2	Fresh.
20. 4.25	12.0	9.8	4.5	28.4	45.3	13.0	23.8	Fresh.
19. 5.25	9.2	8.7	5.4	28.9	47.8	15.7	26.8	Plant dying down after frost. Leaves fresh, except apex.
3. 6.25	9.8	7.5	5.0	29.4	48.3	19.9	22.8	Green leaves separated from dry apex.
3. 6.25	8.8	7.0	5.9	29.9	48.8	18.5	28.5	Dry apex.
7.10.25	11.7	3.2	3.0	35.6	46.5			Old leached brown leaves.



TABLE 11.

*Total Analyses of Digitaria eriantha in Percentage of Stove-dry Material.*

Date.	Ash.	Crude Protein.	Ether Extract.	Crude Fibre.	Carbohydrates: Difference from 100%.	Carbohydrates soluble in 1.4% HCl after removal of Starch.	Carbohydrates soluble in 1.25% H <sub>2</sub> SO <sub>4</sub> and 1.25% NaOH, not soluble in 1.4% HCl.	Remarks.
8. 9.24	11.7	13.4	3.1	31.5	40.3	15.7	12.6	Not quite fresh.
1.10.24	12.3	20.0	4.0	26.7	37.0	10.2	11.4	Fresh.
16.10.24	14.4	17.3	3.7	27.7	36.9	20.0	9.5	Not quite so fresh as on the 1st, but still good.
17.11.24	11.3	16.7	2.9	27.8	41.3	25.9	0.2	Fresh.
19.12.24	12.4	14.5	3.8	27.6	41.7	17.6	14.5	Fresh.
20. 1.25	10.0	7.6	3.7	32.6	46.1	33.7	7.3	Withered.
9. 3.25	9.9	15.6	5.1	25.4	43.9	13.9	24.9	After rain.
6. 4.25	11.5	13.3	3.6	29.4	42.2	12.8	26.7	Dry.
11. 5.25	11.4	11.3	4.0	30.0	43.3	15.4	25.3	
7.10.25	11.7	5.4	1.4	26.6	54.9			Brown leaves.

TABLE 12.

*Sugar Values of the  $\frac{1}{10}$  N. Thiosulphate Solution (Thiosulphate in c.c., Glucose in mg.).*

Thio-sulphate.	Glucose.	Thio-sulphate.	Glucose.	Thio-sulphate.	Glucose.	Thio-sulphate.	Glucose.	Thio-sulphate.	Glucose.
C.c.	Mg.	C.c.	Mg.	C.c.	Mg.	C.c.	Mg.	C.c.	Mg.
1	3.1	7	22.3	13	42.5	19	63.3	25	86.5
2	6.1	8	25.6	14	45.9	20	66.6	26	90.6
3	9.3	9	28.9	15	49.3	21	70.7	27	94.8
4	12.5	10	32.3	16	52.8	22	74.5	28	97.9
5	15.7	11	35.7	17	56.3	23	78.5	29	100.0
6	19.0	12	39.1	18	59.8	24	82.5		