

TECHNICAL NOTES

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COMPOSITION OF FORAGE IN DIETS OF YEARLING STEERS IN NORTHWESTERN COLORADO

Sagebrush - Grass Range

The material presented herewith will provide some valuable information for selecting key species in a sagebrush-grass plant community. This material is categorized as to time of grazing period and also by the various treatments this rangeland received.

Care should be used in extending the unqualified application of these data into climates much different; however, it may serve as a general guide throughout Wyoming and will have particular application to southwestern Wyoming.

The area where this study was made receives 12" of annual precipitation at an elevation of about 6,900 feet.

Notice the complete non-use of big sagebrush even when the degree of browse use approached 50% of their diets.

Attachments: Table I
Table II

TABLE I

COMPOSITION OF FORAGE IN THE DIETS OF YEARLING STEERS ON VARIOUSLY TREATED
SAGEBRUSH-GRASS RANGE AT THE GREAT DIVIDE EXPERIMENTAL RANGE DURING
THE SUMMER OF 1960

Grazing Period	Grass & Grasslike Species	Treatment			
		Check	Spray	Burned	Burned and Seeded
		-(Percent of Diet)-			
5/31-6/16	Crested wheatgrass	5.0 ¹			80.0
	Thickspike wheatgrass		15.0	28.0	
	Intermediate wheatgrass				
	Western Wheatgrass	65.0	55.0	53.0	10.0
	Pubescent wheatgrass				3.0
	Smooth brome				3.0
	Cheatgrass			2.0	
	Nebraska Sedge	2.0			
	Basin wild rye				
	Baltic Rush	1.0			
	Junegrass				
	Indian ricegrass				
	Mutton grass		5.0		
	Kentucky bluegrass	2.0			
	Squirreltail		5.0	1.0	
	Needleandthread	20.0	10.0	3.0	1.0
% Grass Species in Diet		95.0	90.0	87.0	97.0
6/17 - 6/27	Crested wheatgrass	10.5 ¹			61.0
	Thickspike wheatgrass	8.4	13.0	35.0	2.5
	Intermediate wheatgrass				0.6
	Western wheatgrass	45.0	29.0	18.0	19.0
	Pubescent wheatgrass				1.5
	Smooth brome				7.2
	Cheatgrass		1.8	1.4	
	Nebraska sedge	3.3			
	Basin wild-rye		20.5		
	Baltic Rush	1.7			
	Junegrass				
	Indian ricegrass		.1.8		
	Mutton grass	1.3	1.2	1.4	
	Kentucky bluegrass	3.8			
	Squirreltail	0.8	1.8	1.9	0.8
	Needleandthread	4.2	7.5	6.5	2.5
% Grass Species in Diet		79.0	76.6	64.2	95.1

Grazing Period	Grass & Grasslike Species	Treatment			
		Check - - - - -	Spray (Percent of Diet)	Burned	Burned and Seeded
6/28 - 7/16	Crested wheatgrass	3.2 ¹			65.5
	Thickspike wheatgrass	10.5	18.2	16.1	5.4
	Intermediate wheatgrass				3.3
	Western wheatgrass	34.3	23.2	27.7	8.1
	Pubescent wheatgrass				3.8
	Smooth brome				6.5
	Cheatgrass		1.1	1.2	
	Nebraska Sedge	4.1			
	Basin wild-rye		7.3		
	Baltic Rush	2.2		4.4	
	Junegrass				
	Indian ricegrass		3.1	4.5	
	Mutton grass	14.2	5.4		
	Kentucky bluegrass	3.2			
	Squirreltail	0.7	1.1	0.9	0.8
	Needleandthread	6.9	5.0	4.5	2.4
% Grass Species in Diet	<u>79.3</u>	<u>64.4</u>	<u>58.3</u>	<u>95.8</u>	
7/17 - 7/25	Crested wheatgrass				17.2
	Thickspike wheatgrass	20.5	25.0	15.0	22.5
	Intermediate wheatgrass				
	Western wheatgrass	29.3	26.5	21.2	26.5
	Pubescent wheatgrass				
	Smooth brome				5.0
	Cheatgrass	2.6	1.9	2.6	
	Nebraska Sedge	4.8			
	Basin wild-rye		1.5		
	Baltic Rush	2.6		4.8	
	Junegrass		7.0	3.6	
	Indian ricegrass		3.1		
	Mutton grass	7.4	4.6	6.8	7.2
	Kentucky bluegrass	2.0			
	Squirreltail	0.7	3.1	1.8	4.5
	Needleandthread	11.6	5.8	5.6	7.2
% Grass Species in Diet	<u>81.5</u>	<u>78.5</u>	<u>61.4</u>	<u>90.1</u>	

Grazing Period	Grass & Grasslike Species	Treatment			Burned and Seeded
		Check - - - -	Spray - - - -	Burned (Percent of Diet)- - - -	
7/26 - 8/5	Crested wheatgrass				13.7
	Thickspike wheatgrass	32.9	31.7	33.6	33.8
	Intermediate wheatgrass				
	Western wheatgrass	18.7	23.5	8.6	2.4
	Pubescent wheatgrass				
	Smooth brome				3.4
	Cheatgrass	0.8	0.9	1.0	0.8
	Nebraska Sedge	2.9			
	Basin wild-rye				
	Baltic Rush	0.8		3.0	
	Junegrass	1.6	2.5		
	Indian ricegrass	2.7	0.8	0.8	
	Mutton grass	5.9	5.2	4.3	
	Kentucky bluegrass	1.5			
	Squirreltail	0.6		1.0	0.6
Needleandthread	<u>10.3</u>	<u>2.5</u>	<u>3.0</u>	<u>4.3</u>	
, Grass Species in Diet	<u>74.4</u>	<u>68.1</u>	<u>57.0</u>	<u>59.8</u>	
8/6 - 8/22	Crested wheatgrass				17.4
	Thickspike wheatgrass	33.2	33.9	35.2	32.1
	Intermediate wheatgrass				
	Western wheatgrass	26.8	20.2	5.4	3.8
	Pubescent wheatgrass				
	Smooth brome				1.7
	Cheatgrass	0.8	1.0	0.4	0.7
	Nebraska Sedge	2.2			
	Basin wild-rye				
	Baltic Rush	0.8			
	Junegrass		0.5	1.5	
	Indian ricegrass		2.0		
	Mutton grass	4.3	3.3	2.9	
	Kentucky bluegrass	2.2			
	Squirreltail	0.8	0.8	1.0	0.5
Needleandthread	<u>5.2</u>	<u>2.3</u>	<u>2.9</u>	<u>2.1</u>	
% Grass Species in Diet	<u>76.3</u>	<u>64.0</u>	<u>49.4</u>	<u>58.3</u>	

Grazing Period	Forb Species	Treatment			
		Check - - - -	Spray - - - -	Burned - - - -	Burned and Seeded - - - -
		-(Percent of Diet)-			
5/31-6/16	Drummond's milkvetch			3.0	
	Arrowleaf balsa root	2.0			
	Eriogonum				
	Rockymountain penstemon				
% Forbs in Diet		<u>2.0</u>	<u>0.0</u>	<u>3.0</u>	<u>0.0</u>
6/17-6/27	Drummond's milkvetch			0.4	
	Arrowleaf balsa root	2.1		7.0	4.1
	Eriogonum				
	Rockymountain penstemon			0.4	
% Forbs in Diet		<u>2.1</u>	<u>0.0</u>	<u>7.8</u>	<u>4.1</u>
6/28-7/16	Drummond's milkvetch				
	Arrowleaf balsa root	2.2	2.7	3.5	3.3
	Eriogonum				
	Rockymountain Penstemon				
% Forbs in Diet		<u>2.2</u>	<u>2.7</u>	<u>3.5</u>	<u>3.3</u>
7/17-7/25	Drummond's milkvetch				
	Arrowleaf balsa root	1.5	0.5	0.8	3.9
	Eriogonum				
	Rockymountain penstemon				
% Forbs in Diet		<u>1.5</u>	<u>0.5</u>	<u>0.8</u>	<u>3.9</u>
7/26-8/5	Drummond's milkvetch				
	Arrowleaf balsa root	0.4			0.6
	Eriogonum			0.8	0.8
	Rockymountain penstemon				
% Forbs in Diet		<u>0.4</u>	<u>0.0</u>	<u>0.8</u>	<u>1.4</u>
8/6-8/22	Drummond's milkvetch				
	Arrowleaf balsa root				0.2
	Eriogonum				
	Rockymountain penstemon				
% Forbs in Diet		<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.2</u>

Grazing Period	Browse Species	Treatment			
		Check - - - -	Spray -(Percent of Diet)	Burned	Burned and Sæded - - - -
5/31-6/16	Low rabbitbrush	3.0	10.0	5.0	3.0
	Antelope bitterbrush			3.0	
	Horsebrush			3.0	
% Browse in Diet		<u>3.0</u>	<u>10.0</u>	<u>10.0</u>	<u>3.0</u>
6/17 - 6/27	Low rabbitbrush	8.4	23.5	28.0	0.5
	Antelope bitterbrush	10.5			
	Horsebrush				
% Browse in Diet		<u>18.9</u>	<u>23.5</u>	<u>28.0</u>	<u>0.5</u>
6/28 - 7/16	Low rabbitbrush	3.9	5.7	5.5	0.5
	Antelope bitterbrush	14.2	22.6	24.6	
	Horsebrush		5.0	8.1	
% Browse in Diet		<u>18.1</u>	<u>33.3</u>	<u>38.2</u>	<u>0.5</u>
7/17 - 7/25	Low rabbitbrush	2.8	4.6	4.4	5.0
	Antelope bitterbrush	14.0	14.3	16.1	
	Horsebrush		1.9	17.0	
% Browse in Diet		<u>16.8</u>	<u>20.8</u>	<u>37.5</u>	<u>6.0</u>
7/26 - 8/5	Low rabbitbrush	6.9	4.3	7.1	18.0
	Antelope bitterbrush	18.2	17.6	21.8	10.9
	Horsebrush		10.0	13.9	10.2
% Browse in Diet		<u>25.1</u>	<u>31.9</u>	<u>42.8</u>	<u>39.1</u>
8/6 - 8/22	Low rabbitbrush	7.5	8.4	24.0	15.0
	Antelope bitterbrush	16.2	19.2	14.2	18.6
	Horsebrush		7.6	12.5	7.9
% Browse in Diet		<u>23.7</u>	<u>35.2</u>	<u>50.7</u>	<u>41.5</u>

¹ Crested wheatgrass seeds apparently washed into the "check" pastures from adjoining seed pastures.

TABLE II

PERCENTAGES OF GRASSES, FORBS, AND BROWSE IN THE DIETS OF
YEARLING STEERS GRAZING VARIOUSLY TREATED SAGEBRUSH-GRASS RANGE AT
GREAT DIVIDE EXPERIMENT RANGE DURING THE SUMMER OF 1960

Grazing Period	Treatment	Percentages ¹			
		Native Grasses	Seeded Grasses	Forbs	Browse
		- - - - - (Percent) - - - - -			
5/31-6/16	Check	95.0	5.0 ²	2.0	3.0
	Spray	90.0	0.0	0.0	10.0
	Burn	87.0	0.0	3.0	10.0
	Burn & Seed	98.0	80.0	0.0	3.0
6/17-6/27	Check	79.0	10.5	2.1	18.9
	Spray	76.6	0.0	0.0	23.5
	Burn	64.2	0.0	7.8	28.0
	Burn & Seed	95.1	61.0	4.1	0.5
6/28 - 7/16	Check	79.3	3.2	2.2	18.1
	Spray	64.4	0.0	2.7	33.3
	Burn	58.3	0.0	3.5	38.2
	Burn & Seed	95.8	65.5	3.3	0.5
7/17-7/25	Check	81.5	0.0	1.5	16.8
	Spray	78.5	0.0	0.5	20.8
	Burn	61.4	0.0	0.8	37.5
	Burn & Seed	90.1	17.2	3.9	6.0
7/26 - 8/5	Check	74.4	0.0	0.4	25.1
	Spray	68.1	0.0	0.0	31.9
	Burn	57.0	0.0	0.0	42.3
	Burn & Seed	59.8	13.7	1.4	39.1
8/6 - 8/22	Check	76.3	0.0	0.0	23.7
	Spray	64.0	0.0	0.0	35.2
	Burn	49.4	10.0	0.0	50.6
	Burn & Seed	58.3	17.4	0.2	41.5

¹ See Table 1 for the percentages of species that were selected by the animals.

² Crested wheatgrass seeds apparently washed into the "check" pasture from an adjoining seeded pasture.