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Loss by Exposure of Corn Stover & Teosinte.

Composition of Pie Melon.

Fertilizer Analyses of Castor Bean Plant.

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LOSS BY EXPOSURE OF CORN STOVER AND TEOSINTE.

It is the custom, to a considerable extent, in Oklahoma to store corn stover and teosinte in small shocks in the field to be drawn in as required for feeding. It is naturally suggested that such exposure to the sun, rain and wind would cause a loss of feeding value. For the purpose of gaining definite data as to the probable amount of this loss the following analyses were made.

The samples were taken during the third week in April 1896, from shocks that had stood in the open field during the entire winter without having been blown over or scattered.

Sample No. 549.—Corn stover from *outside* of shock.

Sample No. 550.—Corn stover from *inside* of shock.

Sample No. 551.—Teosinte from *outside* of shock.

Sample No. 552.—Teosinte from *inside* of shock.

SAMPLE NUMBER.	POUNDS IN ONE HUNDRED POUNDS.					
	Ash.	Protein.	Crude Fiber.	N-Free Ex't.	Fat	Water in fresh substance.
549.....	7.25	4.87	40.34	46.59	0.95	9.70
550.....	8.04	7.86	38.51	44.46	1.13	10.36
Loss (+) or gain (*).....	+1.79	+2.99	*1.83	*2.13	+0.18
Per cent. loss or gain.....	+9.8	+38.0	*4.7	*4.8	+15.9
551.....	12.64	9.01	33.30	43.71	1.34	13.23
552.....	11.56	13.25	29.96	42.81	2.42	12.41
Loss (+) or gain (*).....	*1.08	+4.24	*3.34	*0.90	+1.08
Per cent. loss or gain.....	*9.4	+32.0	*11.1	*2.1	+44.6

It will be readily observed that there is a large loss. It is fair to assume that the portion lost is that which was most

digestible. Leaving this out of consideration, more than one-third of the protein and one-seventh of the fat of corn stover was lost by exposure. The slight gain in the percentage of crude fiber and nitrogen-free extract adds practically nothing to the value of the food. It, therefore, seems that *fully one-fourth of the feeding value of corn stover is lost from that exposed on the outside of shocks*, assuming that the loss on the inside is unavoidable and disregarding the loss or gain in weight.

The same general statements apply to teosinte. Almost one-third of the protein and one-half of the fat has disappeared, thus occasioning *a loss of fully one-third of the feeding value of teosinte*.

This loss can be largely prevented by stacking the fodders either by placing in stacks with only the butts of the stalks exposed or by placing in long, narrow shocks and feeding from one end. By this method the amount of fodder exposed to the action of the weather, and the consequent loss, is reduced to a minimum. Good wages for a man who has little else to do can surely be made by hauling in and carefully storing the feeding stuffs which are often scarce and which should certainly be well looked after at all times.

COMPOSITION OF "PIE MELON."

In different parts of Oklahoma a plant of the watermelon family called "pie melon" is grown to a moderate extent. These melons resemble watermelons, but are solid meated, thus more resembling the common citron. They frequently weigh twenty pounds or more each. They grow readily and the yield of melons is large, but no definite statements as to exact yields are available. A number of farmers report being well pleased with them as food for either cattle, hogs or poultry. The rind is tough and the melons must be cut or broken. Hogs will eat the pulp, leaving the rind. For feeding to cattle the melons are best cut into small pieces.

The sample was prepared from a ripe melon that weighed approximately fifteen pounds. It was analyzed with the following results:

No.		POUNDS IN ONE HUNDRED POUNDS.					
		Whole Melon, Including Seeds and Rind.					
		Water.	Ash.	Protein.	Crude Fiber.	N-Free Ext.	Fat.
735	Fresh	93.03	0.51	0.56	1.53	4.11	0.3
	Water-free		7.34	7.97	22.02	58.90	3.0

A better understanding of the comparative feeding value of this material may perhaps be secured from a comparison of its composition with that of feeds which resemble it in this respect and about which there is more general information. Below is appended a table comparing the composition of "pie melon" with the average of a number of analyses of other materials.

DRY SUBSTANCE.	POUNDS IN ONE HUNDRED POUNDS.					
	Ash.	Protein.	Crude Fiber.	N-Free Ext.	Fat.	Wat- Fr- Subst.
“Pie melon”.....	7.3	8.0	22.0	58.9	3.8	
Corn silage.....	6.5	8.0	28.7	53.0	3.8	
Corn fodder (field cured).....	4.6	7.8	24.7	60.1	2.8	
Corn fodder (cut green)	5.4	7.5	25.2	58.7	3.2	
Corn stover (field cured).....	5.7	6.4	33.0	53.2	1.7	
Carrots.....	8.8	10.0	11.2	66.3	3.7	

This table clearly shows that the “pie melon” belongs to what is generally classed as “roughness” among stock feed. On account of the large amount of water which it contains, a correspondingly large amount must be fed to secure the same amount of food value. One ton of “pie melons,” according to the above analysis, is approximately equal to:—

- 670 pounds corn silage,
- 240 pounds field cured corn fodder (with ears),
- 525 pounds green dent corn fodder,
- 235 pounds field cured corn stover (without ears), or
- 1410 pounds carrots.

These figures are but estimates. There are no data at hand as to the digestibility of “pie melons,” but the assumption was made that they are as digestible as the substances used in comparison.

FERTILIZER ANALYSES OF CASTOR BEAN PLANTS.

The following determinations of the fertilizing constituents in different parts of the castor bean plant were made for the purpose of gaining information to be used in outlining experiments with this crop. The results are too few to admit of satisfactory discussion and are reported without comment:

1. Leaves, small branches and fruit.

Date, 1896.	Sample Number.	Pounds in 100 Pounds Dry Substance.			Lbs. in 100 lbs. fresh substance.
		Nitrogen.	Potash.	Phos. Acid.	Water
June 19.....	577	4.17	4.21	1.14	81.05
July 6.....	588	3.88	3.94	1.01	81.32
July 31.....	611	3.60	3.39	0.78	80.46
Sept. 29.....	712	3.20	2.67	0.65	80.56
Average.....		3.71	3.55	0.89	80.85

2. Stalks and roots.

Date, 1896.	Sample Number.	Lbs. in 100 Lbs. Dry Substance.			Lbs. in 100 lbs. Fresh Substance.
		Nitrogen.	Potash.	Phos. Acid.	Water.
June 19.....	578	1.28	3.62	0.73	85.10
July 6.....	589	1.04	3.21	0.35	83.93
July 31.....	612	0.70	2.56	0.17	80.02
September 29..	713	0.93	1.69	0.24	78.09
Average.....		0.99	2.77	0.37	81.78

3. Beans.

4. Seed-pods and pod-stems.

Material.	Sample Number.	Lbs. in 100 Lbs. Dry Substance.			Lbs. in 100 Lbs. Fresh Substance.
		Nitrogen.	Potash.	Phos. Acid.	Water.
3. Beans.....	719	3.62	0.69	1.43	4.40
4. Pods.....	720	2.54	6.51	0.11	8.24