THE FARMER'S ADVOCATE.

greater will be the proportion of its constituents appearing in the liquids voided.

210

While there is, therefore, no definite or fixed relation between the percentage of liquid and solid excrement in any class of animals, yet, a study of a large number of analyses will enable us to come to some general conclusions. The following figures represent the average of a large number of American analyses

PERCENTAGE COMPOSITION OF SOLID AND LIQUID EXCREMENTS.

					rnos.	
			Nitrogen	Potash	Acid	
ľ	lame.		%	No.	%	
Cattle	excrement,	solid	 .29	.10	.17	
6.6	6.6	liquid	 .58	.49	.00	
Horse	excrement,	solid	 .44	.35	.17	
4 A	6.6	liquid	 1.55	1.50	.00	
Sheep	excrement,	solid	 .55	.15	.31	
8-4	6.6	liquid	 1.95	2.26	.01	
Swine	excrement,	solid	 .60	.13	.41	
r (6.6	liquid	 .43	.83	.07	

The table shows that the liquid excrement of all the animals mentioned, except swine, is richer in nitrogen and potash than the solid excrement; and, since nitrogen is by far the most expensive of fertilizing elements, it follows that liquid excrement, pound for pound, is worth much more than the solids. The table does not show what proportion of the fertilizing constituents of the food are voided by animals in their solid and liquid excrement, respectively.

As a result of many years of investigation, Lawes and Gilbert, of the famous Rothamsted Station, Eng., have come to the conclusion that out of every 100 pounds of nitrogen in the food there are

	Voided in Solid Excrement.	Voided in Liquid Excrement	
Fattening bullocks	22.6 lbs.	73.5 lbs	
Fattening sheep	16.7	79.0	
Fattening pigs	22.0	63.3	
Milking cows	18.1	57.4	

It will be noticed that the urine contains three times, or more, the nitrogen that the solids do, and, being soluble, it is very much more valuable.

The nitrogen in the food not accounted for in the table is used by the animal in increasing its weight, or in producing milk.

These figures, as in the preceding table, are simply approximations, but they illustrate very forcibly that by far the greater part of the nitrogen voided by animals is contained in the liquid excrement

'The conclusion, then, is irresistible, that the liquid portion of animal excrements is very much more valuable, and it emphasizes the great necessity of farmers using every reasonable means of saving the liquid portion of manure. For this purpose, we should have water-tight stable floors (preferably concrete), and a sufficiency of litter. It is important that the liquids should be soaked up soon after being voided, as it is found that the liquid manure lying in the stable gutter for twenty-four hours will ferment sufficiently to allow almost one-third of its nitrogen to pass into

Upon this basis the conclusion has been reached, from many careful analyses, that a ton of ordinary fresh farmyard manure, when the horse, cattle and swine manure is all mixed, with straw used as litter, will contain :

Nitrogen..... 9 to 15 lbs., at say 15c., say \$1.35 Phos. Acid.. 4 to 9 '' '' 8 '' .34 Potash 9 to 15 "

\$2.21

So that we may say a ton of manure is worth in the neighborhood of \$2.00, at least Of course, the composition and value of ma-

nure depends very much upon the quality of food given the animals. There is no other single factor, with the exception of its care and preservation, which has such an influence on the value of ma-The more nunure as the quality of the food. tritious the food, the more valuable the manure. That from grain-fed animals will be worth much more than from animals only straw-fed.

Manure from fairly-mature fattening animals is much more valuable than from young growing animals or cows giving milk, the excrement of the former containing 90 to 95 per cent., and the latter about 75 per cent., of the manurial ingredients contained in the food.

To show the relative value of feeding stuffs for furnishing plant food, the following table should be inserted

Table showing the value of fertilizing constituents in one ton of the various fodders. according to American and English analyses, estimating nitrogen worth 12 cents, phosphoric acid 41 cents, and potash 41 cents per pound

TOTAL VALUE OF FERTILIZING CONSTITU ENTS PER TON OF DIFFERNT FODDERS.

	Computed	Compute
	American	Fnglish
Fodder.	Analysis.	Analysis
Cottonseed meal	\$19.70	\$22.88
Oil cake	16.77	16.19
Wheat bran	10.46	11.81
Peas	9.02	11.50
Wheat middlings	7.73	10.98
Oats	6.24	6.48
Wheat	6.65	6.22
Barley	4.77	5.74
Corn	5.36	5.54
Clover hay	7.29	8.53
Meadow hay	5.02	6.04
Wheat straw	1.98	2 25
Potatoes	1.22	1.37
Mangels	.87	1.06

The method of valuation shown in the first column is very commonly adopted in estimating the manurial value of fodders, but no allowance is made for what the animals remove in the food; that, however, may be calculated from the figures just previously given. Allowance must also be made for losses which are almost certain to occur before the manure reaches the field ; but, with all deductions, the table is valuable, in giving an intelligent idea of the approximate, relative manurial values of the different foodstuffs, an important consideration in the purchase of these. Farmyard manure is the staple manure that the Canadian farmer must depend on to keep up the fertility of the soil. Practical experience of Canadian, has amply proven that plant food must be added to the soil if we would maintain its fertility. There is no farm of 100 acres; in fact, I find it just small option in this matter. It has also proven what a boon a large, well-preserved and properly-applied rich manure-heap is. When annually obtainable.

FOUNDED 1866

profit and a bare existence, between plenty and It is not only unrivalled in composition, but its value is enhanced by its action on the soil during its decay. No other manure exerts such a powerful chemical and mechanical influence and no other can be applied to all sorts of land with such positive certainty of effect. It is also found to be peculiarly durable, and these merits are quite sufficient to account for the high estimation tion in which it is held by the far-seeing farmer, Its application also greatly increases the huma (vegetable matter) of the soil. This action is extremely important, because humus, besides sup plying plant food, also greatly increases the amount of moisture which the soil is able to re-Therefore, barnyard manure, which so in tain. creases the supply of humus and water-holding power of the soil, is worthy of much more care and attention than it usually receives.

If we wish to obtain the best results, it is a great mistake to allow manure to lie round the barnyard fermenting and leaching all summer long To insure ease of application and after-cultivation all straw used as litter should be cut. The ma nure can then be hauled direct from the stables say, twice a week, and spread at once upon the land, with the least possible labor in handling and in the best condition for application. It is very much better to allow the process of fermen tation or rotting to take place in the soil, rather than in the manure-heap.

After the manure is thus applied in the green condition, and incorporated with the surface soil in spring, it starts up a fermentation which has a most beneficial effect in not only pulverizing the particles of heavy soil, but also by its chemical action, liberating and rendering available elements of plant food which the soil contains in a tied-up condition.

In closing, one point more should be emphasized, and that is the absolute futility of applying manure to a waterlogged soil. Such a soil is not in a condition to receive its beneficial effects. Once having the land properly underdrained, we may then confidently expect the direct and, to an even greater degree, the indirect benefit from the application of manure. THOS. MCMILLAN. Huron Co., Ont.

Implement House.

Editor "The Farmer's Advocate ":

In "The Farmer's Advocate " of January 18th there is a request for plan of implement house, so I enclose a sketch and description of one I built last fall, which I hope may be useful. In the first place, there is a cement foundation on three sides, which is better than posts, as these will rot. Then, bedded in the cement for sills are 2×6 -in. planks, mortised for the tenons at the foot of each post. The frame is of sawed timber, six inches square, the full bill as follows ;

- ⁸ posts, 6 x 6 x 10 feet
 - 3 door-caps, 6 x 6 x 16 feet
- 3 girths, 6 x 6 x 16 feet.
- 1 beams, 6 x 6 x 22 feet

- 2 plates, 6 x 6 x 48 feet.

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Horse manure being of a very dry nature, it is extremely difficult to effect its thorough mixture with the litter, and for this and other reasons, it is liable to rapid fermentation, in which process the most valuable element (nitrogen) is likely to be lost. Prof. Roberts, of Cornell University, has found that horse manure, piled up alone for four or five months, loses one-half its value. To prevent this, it should be at once mixed with manure from the cattle stables, and, where cattle are housed in loose boxes, or even tied, there is no better method than to deposit the horse manure into the cattle pens (or in the gutters for litter) each day, and draw all the manure from these loose boxes direct to the field, say, twice a week. In fact, the best results are obtained where the manure from all the farm animals is mixed very soon after it is made.

I find that in the past, the American Experimental Stations have adopted certain figures to represent the market value of nitrogen, phosphoric acid and potash in manures. From these figures, I also find that the text-book, "Science in Farming," has adopted the following standard, the range being according as the composition of solids and liquids are being dealt with. of urine, being already in solution, are of the highest value

10 to 22 cents per lb. Nitrogen from Phosphoric Acid 6 to 10 cents per lb. Potash 4 to 5 cents per lb.

I also find, from some of the latest bulletins issued from the Contral Experimental Farm and Ontario Agricultural College, that these valuations (approximately, at least) are endorsed.

The above bill of timber and lumber is for a huilding 22 x 48 feet, which is not too big for a enough. On account of danger from fire, and the difficulty of handling implements in a hurry, it is better to have implement house at some distance it means all the difference between substantial from other buildings. I cannot give exact cost

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Edito Tł Prince pecul have withc tinue our c upwa area not a when the o most Th comp seriou We ing c or Sc should 5 incl the fo all le manui is put Th

PLATE 48 FEEI DOOR CAP DOOR CAP DOOR CAP FROM GROUND TO CAP SFT CEMENT BASE CEMENT BASE Front View Implement-shed Frame. PLATE 48 FEET L L 11 6×6 GIRTHS ACROSS THE BACK TO KEEP RIGS FROM HITTING BOARDING SILL 2 ×6 CEMENT FOUNDATION

View of Rear Implement-shed Frame.