

many badly colored and bad flavored apples, and that this can be remedied by "heading back" which will largely serve in lieu of thinning, and by furnishing to the bearing orchard yearly a reasonable amount of available plant food, largely through the aid of plants and animals. I am well aware that the methods here suggested will have to be varied to suit local conditions; still I claim that the principles involved are correct, and that if they are intelligently practiced in connection with the best methods of defending the fruit from its enemies, a great advance will be made.

In the peach and plum orchards the practices which I have suggested are not likely to be the best, as it will be found advisable, in most cases, to keep these constantly under cultivation. But here like in the former case, fertility may be preserved by feeding animals during the winter and by preserving and removing the manures produced to the orchards. I have the utmost faith that this method of getting plant food through plants and animals will be found to be the most economical in most cases.

In order to give some idea of the amount and value of the manure produced by various classes of animals, I give somewhat in detail some of the results secured at our Station in the last few years:

VALUE PER TON.		QUANTITY PER DAY.	
Horses	\$2.79	Cows in full milk,	81 lbs.
"	2.30	" "	89 "
"	2.80	Horses	58 "
Cows	2.08	"	52 "
"	2.46	150 lb. Pigs	3½
"	2.29	140 lb. Sheep	5½
Sheep	4.19		
Mixed	2.38	150 lb. "	7½
"	3.05		
"	3.61		
Swine	3.41		

Another method of determining the value of the manure is to compute the plant food in it at commercial values. In this case, the value will be found to exceed one-half of the cost of the food fed to the animals which produce the manure; but we must be cautious in estimating the value of the elements found in farm manures, as they are not likely to be so available nor so easily nor perfectly distributed as are good commercial fertilizers. I contend that the soil should be cultivated and plant food set free to the utmost limit; second, that

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