

Our doctrine then is that manure has no substitute—chemical, physical or biological—for maintaining and increasing soil fertility. The more manure the larger the crops, the larger the crops the more live stock that can be kept, the more live stock on the farm the more the manure. This means that rational farming is mixed farming and that mixed farming means increased crop production.

We may very briefly consider one or two of the more important phases of this manure question as emphasized in our campaign. First, the necessity of sufficient litter in the barn, stable, piggery, etc., to absorb and retain all the liquid excreta. This necessity has not been duly recognized on many of our farms, and thousands of tons of plant food in the most valuable form annually have been allowed to go to waste. As regards plant food, especially nitrogen and potash, the liquid is richer than the solid excreta and, further, these elements are present in a soluble and immediately available condition and hence more valuable than those in the solid excreta. If the supply of straw is short, sawdust, or air-dried peat or muck should be employed as supplemental litter. Peat and muck, of which there are many and large deposits in Canada, when air-dried possess a high absorptive capacity and have in themselves a manurial value of no mean importance. Hence their use in the way indicated increases not only the bulk but the value of the resultant manure. They can also be used in the making of valuable composts.

Nearly ninety per cent. of the total potash excreted by the animal is present in the urine. This fact alone would emphasize the value of the liquid excreta to-day, when the product of the Stassfurt mines, practically the world's sole economic supply of potash, is virtually unobtainable. Such small quantities of these potash compounds as remain on this continent are far too high in price to be used for agricultural purposes.

Then we are advocating the application of the manure to the soil while still fresh. This we have proved to be the most economic method in general farming, for the rotting of manure even under the best conditions is inevitably accompanied by some loss of organic matter and nitrogen. If the rotting manure is exposed, as in the barnyard or unprotected heap in the field, there are further losses by the leaching away of the soluble nitrogen and potash and these losses may be enormous. It is a conservative estimate that the losses from the careless management of manure amount to thirty per cent. or more of the initial value of the manure. Undoubtedly these losses throughout the Dominion represent annually many thousand dollars worth of plant food, needed all too badly for our crops.