

liquid thus applied, it is difficult to see what advantage this method possesses over carrying the liquid directly from the stable to the heap. On the average farm, straw is usually abundant, and where straw is plentiful there is little need of a liquid manure tank. Cut straw is more satisfactory than long straw, and a little cut straw in the bottom of the gutter behind the cattle will facilitate cleaning the stables. If straw is somewhat scarce, sawdust is a valuable adjunct. Where sawdust has to be used, it is better to use it in conjunction with straw than to use all the straw first and then use sawdust alone, since the mixture makes a more satisfactory bed and a more uniform quality of manure. Sawdust is excellent for the bottom of gutters, owing to its great absorbent power. Peat is an extremely valuable absorbent of liquid manure, but it is available in comparatively few districts. It is needless to say that for the system just described the stable gutters should have no outlet, and they are all the better if at least sixteen inches wide and from six to eight inches deep. Taking everything into consideration, therefore, the liquid manure tank seems unnecessary on the average farm; but for those cases where absorbents are extremely limited or entirely out of the question, the liquid manure tank is certainly better than nothing, and may be employed to advantage.

Open yards. After the manure is removed from the stable, the most serious losses are likely to occur. When manure is kept in open yards there is danger of losing a great deal of the soluble, and hence the most valuable part of it, unless much care is exercised. Many farmyards seem specially constructed for the purpose of wasting manure. It is no uncommon thing to see a large, sloping yard with the manure scattered thinly over it. As a result, the thin layer of manure is unable to hold all the rain-water which falls upon it, and the slope in the yard gives this excessive water a chance to drain away, carrying with it a large part of the soluble plant food from the manure. Frequently, too, the buildings about the yard have no eave-troughs. In such cases the manure receives an additional supply of water from the roofs, and the waste of plant food is proportionately greater. Where manure is kept outside, the opposite of the conditions just described should exist. The yard should be lower in the centre than at the sides so as to hinder drainage from the manure heap, and the buildings about the yard should be furnished with eave-troughs. It must also be remembered that twice as much rain will fall upon one hundred square yards as upon fifty square yards; consequently in order that the manure heap may receive as little rain as possible, it should be spread over as little ground as possible and kept in a compact pile. Manure which contains considerable straw may be made to absorb nearly all the rain which falls upon it, if it is kept in a compact heap so as to expose as little surface as possible to the rain. Many otherwise good yards are spoiled by having too large a space graded so as to be lower in the centre than the surrounding yard. The part of the yard thus hollowed out should be no larger than is absolutely necessary for the manure pile, while the remainder of the yard should fall away from the pile. When a large yard is made to slope towards the centre, it collects a great amount of water which floods the lower portion, causing much inconvenience as well as injuring the manure.

Manure Sheds. Owing to the dangers of loss from the open yard, even after more than average precautions have been taken, the covered manure shed is generally regarded as more satisfactory. The manure shed has several important advantages over the open yard. The manure is protected from rain and snow, and if the shed has a water-tight bottom, and a fair amount of absorb-

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