

Something About Fertilizing

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[Note: Advice to the Bessarabian farmer about the significance of manure in the process of restoring the nutrients in the fields and how to set up and apply a manure pile.]

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[Translation Begins]

Something About Fertilizing

Plant nutrients are extracted with each crop. They must be replaced again by fertilizing the soil for the preservation of fertility. The most significant fertilizer is stable dung or manure.

Manure contains all the substances which serve to nourish the plant. Of course, the chemical composition of stable manure depends on the species of animal, the feed, and bedding that have been provided for the animals. An approximate measure of the composition of the stable manure can be seen in the following table:

One thousand pounds of stable dung contains approximately

Water	772 pounds
Inflammable substances	183 pounds
Ash	45 pounds
Nitrogen	4.3 pounds
Potash	4.2 pounds
Lime	7 pounds
Magnesia	1.1 pounds
Phosphoric acid	1.4 pounds

Nitrogen, potash and phosphoric acid occur in the soil only in very low quantities, so crops can easily exhaust them, but, on the other hand, with a supply of stable dung can be restored to the soil. The manure does not only work directly through its constituent parts, but also improves the physical properties of the soil. A compact soil becomes looser by means of stable manure, however, a too loose soil becomes compacted. A normal crumbly structure of the soil can also be achieved with stable manure fertilizers. However, for the fertilizer to act effectively on the soil, it must go through a special treatment process, because fresh dung is harmful to the plants

and dried out dung loses all its good qualities and would bring no benefit to the plants. Manure may be spread on the field only in a good rotting condition. The manure must not lose any components through evaporation or leaching by rain water. Manure must always be compacted tightly in layers on the manure pile which can be done easily every day by letting the cattle trample on it. Compacting the dung is essential so that decay without air takes place, otherwise, such bacteria from the air would gather in the dung and the potassium nitrate (*Saltpetersäure*) would ferment into ammonia, the latter being very volatile. The liquid manure must be able to form a special reservoir at the base of the dung heap. This liquid manure must, from time to time, be lifted with a pump to constantly wet the manure. When bringing the manure out onto the field the manure pile must always be stabbed into vertically. In the field, the dung should not be allowed to stand in piles for a long time because it allows for what is called *Geilstellen* [weeds that grow in an especially nutrient-rich environment].

Because the dung of various species of animals has different properties, it is better to mix everything properly on the manure pile. Horse manure and sheep dung are hot fertilizers to be used exclusively for manure piles. Cow manure, as well as pig dung and human excrement are cold fertilizers—they do not heat up.

Compost is a kind of fertilizer, which from year to year is becoming increasingly important. It is mainly used for vegetable gardening, on meadows, on potato and clover fields. Various farmyard waste is used for the compost piles, to which is added also dung, earth, soot, etc. All this has to be punctured (*durchgestochen*) from time to time and watered with liquid manure. In 1-1½-2 years, everything decomposes to the point that the compost turns into a dark uniform earthy mass.

[End of Translation]