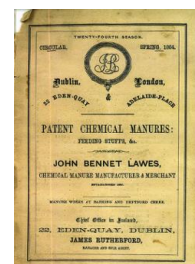


Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Circular: Patent Chemical Manures: Feeding Stuffs, Etc.



[Full Table of Content](#)

Remarks on Lawes' Manures and Quantity per Irish Acre

James Rutherford

James Rutherford (1864) *Remarks on Lawes' Manures and Quantity per Irish Acre* ; Circular: Patent Chemical Manures: Feeding Stuffs, Etc., pp 8 - 11 - DOI:

<https://doi.org/10.23637/ERADOC-1-142>

LAWES' SUPERPHOSPHATE, OR PATENT TURNIP
MANURE.

Reference has already been made to the analyses for this and former years, shewing that the uniformity and high character of this Manure are fully maintained, and the repeated tests applied by Professors Apjohn and Cameron, in Ireland, are corroborative of the reports by Professors Voelcker and Way in England, in which they state, after visiting Mr. Lawes' Works, and drawing samples from a bulk of 7,000 tons—"The Soluble Phosphates obtained by *separate* analyses of the *seven different samples* taken by us, did not vary from the average more than one per cent., showing the manure to be of very uniform composition."

The dry and fine condition in which this and all other manures are sent out from Mr. LAWES' Works render them easy of application, and certain in their action on the crop. Some manures analyze well, and yet are very seldom found to produce satisfactory results in the field, because the constituents of the manure are rendered inactive and comparatively valueless by that adhesiveness and excess of moisture which generally characterise either inferior or badly made manures.

QUANTITY TO APPLY, PER IRISH ACRE.

If Superphosphate is used alone for the Turnip crop, the usual quantity is from 8 to 10 cwts. per Irish acre; if half dung and half superphosphate, from 4 to 6 cwt. per acre, of the latter; if dung, guano, and superphosphate are applied, about *equal money value* of the two artificial manures; and if guano and superphosphate are applied without any dung, the same proportions, but in greater quantity. Superphosphate acts most beneficially on light and medium soils, and guano is more effective on damp or stiff clay soils; but on all heavy land where roots are grown, dung should form at least a portion of the manures used, as, among other advantages, its effects are to lighten the land, rendering it more porous, and thus permitting freer action to artificial manures and atmospheric influences.

Superphosphate may be applied close to the seed, and in this way the growth of early-sown turnips is rapidly promoted, putting the crop soon beyond the power of the fly—thick sowing of seed, however, being the best preventive of this pest. Guano, whether by itself or mixed with Superphosphate, should have a covering of soil before the seed is sown, in order to prevent the loss of ammonia by evaporation, and also to protect the seed

from injury caused by its immediate contact with guano. One of the most important points in green cropping is *the thorough tilling and cleaning of the land*, and better have the sowing rather late than this imperfectly attended to. The speedy action of artificial manures enables the farmer to devote more time to the plough and harrow, and thus to some extent compensates for those delays which, though often inexcusable, are sometimes unavoidable.

MINERAL SUPERPHOSPHATE.

This Manure is prepared as formerly, and the price is £1 per ton under the patent Manure, but the demand is so limited, a stock of it would not be kept unless to show that if a low priced manure is wanted it can be supplied. The chief merit of this purely mineral manure is its soluble phosphates, the insoluble portion not possessing any agricultural value; and even at a lower figure than £6 per ton, it would not be such good value as the £7 manure.

MANGOLD MANURE.

This manure contains about 5 per cent. ammonia, and 12 to 15 per cent. soluble phosphates. A manure of this composition has been found most suitable for the Mangold crop. The usual quantity, with a liberal supply of dung, is from 4 to 6 cwts. per Irish acre, spread in the drill, on the top of the dung. Some recent experiments show that salt, as a manure, is not so beneficial to the Mangold crop as is generally supposed, better results having been obtained where no salt had been applied, as compared with the addition of salt, where soil and other manuring were the same. While in some cases salt seems to produce good effects, yet enough has been ascertained to warrant in drawing attention to the subject, and cautioning against its indiscriminate application.

GRASS MANURE.

The constituents of Lawes' Grass Manure include nitrogen, ammonia, and phosphates, and it has been found most suitable as a spring top-dressing for pasture and meadow. The usual quantity per Irish acre is from 4 to 6 cwts. For further information on this subject the reader is referred to the annexed Paper by Mr. Lawes and Dr. Gilbert, on the "Effects of different Manures on the Mixed Herbage of Grass-Land."

WHEAT MANURE.

The Wheat Manure is specially prepared for this crop, and contains from 9 to 10 per cent. of ammonia, in the form of salts of ammonia and organic matter, yielding ammonia by decomposition. Apply from 4 to 5 cwt. per Irish acre, sown broadcast, and harrowed in with the seed. A mixture of about equal parts of Peruvian Guano and Superphosphate of Lime, applied as above, at the rate of from 5 to 6 cwts. per Irish acre, is also a very good manure for wheat.

OATS.

The manure suitable for wheat may also be applied to oats, but rather lessening the quantity. When corn crops require some artificial top dressing late in the Spring, nothing will act so beneficially as nitrate of soda; but the most economical system is, to give a sufficient supply of manure when the seed is sown.

BARLEY MANURE.

The liability of the barley crop to fall renders it rather a critical matter to decide the proper quantity of manure. Previous cropping and the condition of the land should be considered. If the barley succeed a corn crop, 5 to 7 cwts. per Irish acre will not be too much; if after roots, all of which have been removed, 4 cwts. will be sufficient. The manure should be sown and harrowed in at the same time as the seed.

POTATOES.

The mineral matter in the acreage produce of a root crop is very large indeed; the following is the amount contained in a moderate crop of wheat-grain and of potatoes:—

			Mineral Matter.
28 Bushels Wheat-grain,	28 lbs.
8 Tons Potatoes	180 „

Of potash alone, the 8 tons of potatoes will contain about eight times as much as the 28 bushels of Wheat. The exhaustion of

mineral constituents by the sale of potatoes, may be compensated for by bringing upon the farm a sufficient quantity of stable-dung, or other town manures, sea-weed, or even fern or brake from neighbouring wastes for litter. It is the general practice to dung heavily for potatoes. Although the crop might not be so large, it is probable that if the potatoes were taken after some other crop well dunged, instead of the dung being applied directly for their growth, they would be less liable to disease. Supposing this plan adopted, $5\frac{1}{2}$ cwts. per Irish acre of an equal mixture of Peruvian Guano and Superphosphate of Lime, or 7 to 8 cwts. Superphosphate of Lime alone, should be used for the potatoes. Or, in case of dung being employed, the best mode of application would be to plough it into the land in the Autumn, the potatoes being set in the following Spring.

NITRATE OF SODA.

For several years past Nitrate has been sold at from £14 to £15 per ton, according to quality, and a largely increasing demand attested its value. There is no scarcity this season, but the stocks in the English market are held by speculators, and the result to consumers is an advance in price of upwards of £2 per ton; this must seriously check the demand, if not for chemical, at least for agricultural purposes, yet there seems not the least indication of any decline in price.

PERUVIAN GUANO.

There is no alteration in the price of Peruvian Guano, nor does the laboured and biassed efforts of its detractors seem to have any other effect than to confirm its merits as one of the most valuable of all our agricultural fertilizers. To the farmer, the great point in connexion with Guano is to *procure it genuine and apply it judiciously*; but this hint applies equally to Superphosphates and other manures which are now so largely used *in conjunction with* Guano, the highly ammoniacal and nitrogenous character of the latter being thus modified, in various degrees, as may be considered necessary for different soils and crops. As a mixed system of cropping is likely to ensure the most profitable results, *on the average of seasons*, so a mixed system of manuring, if properly carried out, will with equal certainty produce the same effect.