

# [On the Nourishment of Vegetables]

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Type  
Agriculture

Ingredients  
grains  
oily seeds  
vegetable  
lime  
salt  
saltpeter  
peas  
beans  
buckwheat  
rape  
rapeseed  
hemp

Places  
Nova Scotia  
France

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Description

A discussion of the efficacy of various kinds of fertilizer. nn.11-13. Microfilm Reel 8062.

Transcription

THE art of Husbandry boasts an origin coeval with the human race. Its age, however, seems to have contributed but little towards its advancement, being at present extended but a few degrees beyond its primitive institution.

Until the Philosopher condescends to direct the plow, Husbandry must remain in a torpid state. It is the peculiar happiness of this age, that men of a liberal education begin to cultivate this art with attention. We cannot say too much in praise of the respective societies lately established in this island, and in France, for the improvement of Agriculture. They have raised a noble spirit of emulation a-

mong the country gentlemen and sensible farmers. Each seems envious of contributing something towards the general stock of knowledge.

As I intend the nourishment of plants to be the subject of this essay, it will be proper to observe, that I have been directed in my researches by a strict attention to the analogy that subsists between animals and vegetables. We know that neither of them can subsist long without air and nourishment.

I lay it down as a fundamental maxim, that all plants receive their principal nourishment from oily particles incorporated with water, by means of an alkaline salt or absorbent earth. Till oil is made miscible, it is unable to enter the radical vessels of vegetables; and, on that account, providence has bountifully supplied all natural soils with chalky or other absorbent particles. I say natural soils, for those which have been assisted by art are full of materials for that purpose; such as lime, marl, soap, ashes, and the volatile alkaline salt of putrid dunghills.

It may be asked, whence do natural soils receive their oily particles? I answer the air supplies them. During the sum-

mer months the atmosphere is full of putrid exhalations arising from the steam of dungills, the perspiration of animals, and smoke. Every shower brings down these oleaginous particles for the nourishment of plants. When they happen to fall upon a very sandy soil, the solar heat exhales the most of them. Hence an additional season for covering our light soils with herbage during the summer months. On the contrary, when these particles fall upon stiff land, or such as has been marled or limed, an intimate union is produced, too strong for the natural heat to resolve. it is observed that lime mechanically binds a hot sandy soil. We now see that it also fertilises it; but the farmer must not presume too much upon that quality.

The ingenious Mr. Tull, and others have contended for earth's being the food of plants. If so, all soils equally tilled would prove equally prolific. The increased fertility of a well pulverized soil, induced him to imagine that the plow could so minutely divide the particles of earth, as to fit them for entering the roots of plants.

Water is thought, by some, to be the food of vegetables, when in reality it is only the vehicle of nourishment.--Water is an heterogeneous fluid, and is no where to be found pure. It always contains a solution of animal or vegetable substances.

All rich soils, in a state of nature, contain oil, and in those lands which have been under the plow for some years, it is found in proportion to the quantity of putrid dung that has been laid upon them, making allowance for the crops they have sustained.

To set this matter in a clearer light, let us attend to the effects of manures of an oily nature, and we shall soon be satisfied that oil, however modified, is one of the chief things concerned in vegetation. -- Rape-dust, when laid on land is a speedy and certain manure, though an expensive one, and will generally answer best on a limestone land, or where the soil has been

moderately limed. Farmers that live in the neighbourhood of large towns use abundance of soot. It is an oily manure, but different from the former, containing alkaline salt in its own nature, calculated as well for opening the soil, as for rendering the oily parts miscible with water.

It is observed that pigeons dung is a rich and hasty manure. These animals feed chiefly on grains and oily seeds. Swines dung is of a saponaceous and oily nature, and perhaps is the richest of the animal manures. The dung of ruminant animals, as cows and sheep, is preferable to that of horses at grass, owing to the quantity of animal juices mixed with their food in chewing. And here I beg leave to remark in general, that the fatter the animal, *ceteris paribus*, the richer the dung.

In order to strengthen my argument in favour of oil being the principal food of plants, I must beg leave to observe, that all vegetables, whose seeds are of an oily nature, are found to be remarkable impoverishers of the soil, as hemp, rape, and flax.

It is usual to talk of the salts of the earth; but Chymistry has not been able to discover any salts in land which as not been manured, tho' oil may be obtained from every soil, the very sandy ones excepted. Marl, though a rich manure, has no salts. It is thought to contain a small portion of oleaginous matter, and an absorbent earth, of a nature similar to limestone, with a large quantity of clay intermixed.

It is a received opinion, that lime enriches the land it is laid upon, by means of supplying a salt fit for the nourishment of plants; but by all the experiments that have been made upon lime, it found to contain no kind of salt. It is the nature of lime to attract oils and dissolve vegetable bodies. Upon these principles we may account for the wonderful effects of lime in the improvement of black-moor-land. Moor-earth consists of dissolved, and half-

dissolved, vegetable substances. It is full

of oil--Lime assimilates the one and dissolves the other.

To the universal principle, oil, we must add another of great efficacy, though very little understood; I mean the nitrous acid of the air. That the air does contain the rudiments of nitre, is demonstrable from the manner of making salt-petre in the different parts of the world. The air contains no such salt as perfect nitre; it is a factitious salt, and is made by the nitrous acid falling upon a proper matrix. The makers of nitre form that matrix of the rubbish of old houses, fat earth, and any fixed alkaline salt. The universal acid, as it is called, is attracted by these materials, and forms true nitre, which is rendered pure by means of crystallization, and in that form it is brought to us. In very hot countries the nature earth forms a matrix for nitre, which makes the operation very short.

Hitherto I have considered plants as nourished by their roots. I shall now take a view of them as nourished by their leaves. Vegetables that have a succulent leaf, such as vetches, peas, beans, and buckwheat, draw a great part of their nourishment from the air, and on that account impoverish the soil less than wheat, oils, barley or rye, the leaves of which are of a firmer texture.

Rape and hemp are oil bearing plants, and, consequently impoverishers of the soil; but the former less so than the latter, owing to the greater succulency of its leaf. The leaves of all kinds of grain are succulent for a time; during which period the plants take little from the earth; but as soon as the ear begins to be formed, they lose their softness and diminish in their attractive power. The radical fibres are then more vigorously employed in extracting the oily particles of the earth, for the nourishment of the seed. Such, I apprehend, is the course of nature.

Annotations

**certeris paribus**

(Latin) All things being equal.

On the Nourishment of Vegetables recipe from Early Modern Maritime Recipes:

<https://emmr.lib.unb.ca/recipes/240>