



ORGANIC FERTILIZERS

When your soil is really fertile you won't need to feed your plants much, if at all. Over the years if you keep loading well rotted manure and compost onto the soil you will only need fertilizer as an occasional supplement, e.g. when plants look tired after standing out all winter or when fast growing crops need a boost because the weather is too cold for them to be planted out.

Until the soil is fully fertile, however, you may need to add the major elements for plant growth. These are nitrogen, phosphorus and potassium (otherwise known as NPK). Occasionally, trace elements and minerals may be lacking in the soil. You can get iron deficiency on alkaline soils and phosphorus deficiency on acid ones. Standard practice until the soil is up to scratch is to add a top-dressing of an all round fertilizer – e.g. blood, fish and bone or seaweed meal – before planting. If you have tired looking plants in containers, a spray of liquid fertilizer should perk them up.

Unlike chemical fertilizers, the organic ones, which are made up of naturally occurring plant, animal or mineral elements, cannot harm the soil or the population of valuable micro-organisms within it.

MAJOR ELEMENTS (Macronutrients)

Nitrogen (N) encourages leaf and shoot growth. A component of chlorophyll, it gives plants their greenness. If there is too little nitrogen, plants will be stunted and pale. If overdosed with it, they will grow too fast and become soft and sappy – an invitation to pests.

Phosphorus (P), or phosphate, encourages healthy growth throughout the plant including the roots. Only small quantities are needed. A deficiency shows as stunted growth.

Potassium (K) or potash is associated with the size and quality of fruit and flowers. It toughens up plants which protects them from pests and disease. A deficiency shows as small flowers and fruit and yellowing or browning of the leaves.

Magnesium (Mg) is another greening agent. A deficiency which shows as chlorosis, a yellowing of the leaves starting between the veins. It is easily remedied by adding organic matter to the soil.

Calcium (Ca) helps to manufacture protein.

Sulphur (S) is part of plant protein and also helps to form chlorophyll. A lack is unusual where the soil is rich in organic matter.

TRACE ELEMENTS (Micronutrients)

Manganese (Mn) makes chlorophyll and protein. A deficiency shows as stunting and yellowing of new leaves.

Iron (Fe) is similar to magnesium. Only the tiniest quantities are needed. Iron deficiencies are most likely on chalky soils. Symptoms of a lack are pale leaves with brown edges on the margins.

Copper (Cu) and **zinc (Zn)** activate enzymes.

Boron (B) is an important element for growing tissue. A lack can cause ‘corkiness’ in fruit and vegetables.

Molybdenum (Mb) helps to produce protein.

Oxygen, carbon and hydrogen are taken up from sunlight, air and water.

COMMERCIAL FERTILIZERS

Bone meal is rich in phosphate for root growth. Good to sprinkle a little in the planting hole when planting trees.

Blood, fish and bone is a balanced all round fertilizer.

Blood meal is very high in nitrogen. It can be used as a quick tonic for tired plants in spring.

Dried manures have all the trace elements but are low on NPK.

Epsom salts are a soluble form of magnesium.

Fish meal contains nitrogen and phosphate.

Hoof and Horn is rich in nitrogen. It works on slow release so apply a week before planting.

Rock phosphate promotes rooting and is a good alternative to bone meal for dog owners.

Rock potash is a useful source of pure potash. It works on slow release and is a good fertilizer for vegetables.

Seaweed meal is an excellent, slow release, all round fertilizer. It contains cytokinins, hormones that promote photosynthesis and protein production.

Wood ash from the bonfire is high in potassium and some phosphate – the quantities depend on the wood.

ADDITIONAL SOIL IMPROVERS FROM THE ORGANIC CATALOGUE

Seaweed plus Iron for specific iron deficiencies which can occur on chalky soils.

Chase Organic Fertilizer is a crumbly balanced organic fertilizer. It contains dried blood, feather meal, cocoa shells*, manure, seaweed meal and vinasse*.

Chase Animal-free Fertilizer is soya-based with high nitrogen for green crops.

Natural Gardening All purpose Fertilizer has been developed for hardy root development. It contains rapeseed, soybean meal, kelp meal, lignite*, phosphate and sylvinite.

Organic Wormcasts contain nitrogen, phosphates, potash, trace elements, live bacteria, fungi and microbes. It is a good soil improver and potting compost.

Earth Cycle Mulch for heavy soils. It helps aerate the soil. No animal ingredients. Made from green waste and woody plant materials with slow release nutrients.

Strutch is a mineralized straw mulch and is an environmentally friendly alternative to peat. It can be used as a base material for home made composts or as a mulch.

Cocoa Shell Mulch is an organic fertilizer and soil conditioner as well as mulch. As it’s scratchy it is said to deter slugs and cats.

Lakeland Gold is a high potash soil conditioner. It is produced sustainably and is composed of bracken and stable manure. It is composted and the result is a rich humus with slow release nutrients. It provides food for the worms and helps water retention.

Greenvale Organic Plant Food is a mix of pelleted chicken manure (from free range hens) and seaweed.

***Comfrey Pellets**, saves the bother of harvesting your own and spares you the extremely unpleasant smell.

LIQUID FERTILIZERS

You can make very good fertilizers from the leaves of **comfrey** or **nettles**. Tie up a bunch of leaves in a hessian sack and leave them to steep in a bucket of water for a week or two.

Comfrey is a superb all round fertilizer though not for alkaline soils (like at KHWG). Apart from making liquid fertilizers you can throw the leaves into the potato trench or lay them on

the ground as a mulch. You can also buy comfrey in pellet form*. Nettles (also alkaline) are best gathered in spring when at their most potent for fertilizer.

You can also make effective liquid fertilizers by soaking **manures** and **compost** in the same way. Measurements are guesses. Normally, dilute 10:1 for spraying.

COMMERCIAL LIQUID FERTILIZERS

Plant food concentrate (Chase Organics) contains lucern, vinasse, rock phosphate, molasses and sugars.

Chase tomato feed contains amino acids, seaweed and vinasse to provide the potash needed by tomatoes, peppers and aubergines.

SM3 Seaweed (originally Chase sea magic) is excellent for the all round health of plants.

GLOSSARY

Cocoa shells are the discarded shells of the cocoa bean, a by-product of the chocolate industry.

Feathermeal is a poultry by-product high in nitrogen which works on slow release.

Kelp is a marine algae like seaweed.

Lignite also known as 'brown coal' is a substance in an intermediate stage between peat and coal.

Lucerne is alfalfa, *Medicago sativa*. It is a leguminous crop usually grown as a green manure which releases nitrogen into the soil through its roots.

Sylvinite is an ore mined under licence for potassium.

Vinasse is a by-product of the sugar industry.

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