

Humus

Adapted from John Seymour's classic The Self -Sufficient Gardener,
(Dolphin Books, Double Day and Company,
Garden City, NY, 1979) page 16

"Above all, everything about your soil can be improved by the addition of one thing: **Humus**.

Humus is vegetable or animal matter which has died and been changed by the action of **soil organisms** into a **complex organic substance** which becomes part of the soil. Any animal or vegetable material, when it dies, can become **humus**.

Humus has many beneficial effects on the soil.

All the following have been established experimentally by **soil scientists** __ they are not just the optimistic conjectures of a **humus-enthusiast**:

- 1.) **humus** protects soil from erosion by rain and allows water to percolate gently and deeply;
- 2.) **humus** reduces erosion by wind;
- 3.) **humus**' slimes and gums stick soil particles together and thus turn a very fine soil (sandy), or clay, into a coarser one;
- 4.) **humus** feeds **earthworms** and other useful **soil organisms**;
- 5.) **humus** lowers soil temperature in summer and increases it in winter;
- 6.) **humus** supplies nutrients to plants, because it contains all the elements that plants need and releases them slowly at a pace that the plant can cope with;
- 7.) **humus** enables the soil to hold water like a sponge, and minimizes the loss of water by evaporation;
- 8.) **humus** ensures that chemical changes are not too rapid when **lime** and **inorganic fertilizers** are added to the soil;
- 9.) **humus** releases **organic acids** which help to neutralize **alkaline soils**, and help to release **minerals** from the soil making them available to plants;
- 10.) **humus** holds the **ammonia and other forms of nitrogen** in the soil in an exchangeable and available form__ without **humus** __ **nitrogen** is lost quickly because of the action of **denitrifying bacteria**; and

[**Note**: This is the case when using tree bark and wood chips as a **mulch** (ground cover).]

- 11.) **humus** keeps down many **fungal diseases** and the notorious **eel worm**.

Clearly one of your main aims as a **gardener** should be to increase the **humus** content of your soil as much as possible. Soils ranging from the heaviest clay to the purest sand can be improved and rendered fertile by the introduction of sufficient **humus**. There is no soil that does not benefit from **humus**, and there is no crop, that I know of, that is not improved by **humus**.

Now, any **organic material** that you put into the soil will produce **humus**. Compost, green manure, farmyard manure, **peat moss**, **leaf-mold**, seaweed, crop residues: **anything that has lived before can live again**. Bury it in the soil and it will rot and make **humus**. Leave it on top of the soil; it will rot, the **worms** will drag it down deep under the soil and it will still make **humus**."

[**Note:** John Seymour's use of the word "worm" includes both vegetable matter eating **earthworms** and other **worms** that feed on decayed animal flesh eating other. Any confusion of the **vegetarian earthworm** that eats **vegetable matter** with the other **soil worms** that eat decaying **animal carcasses** should be stopped with this biological distinction here.]

"Humus is the firm basis of **good gardening**.

It is possible to grow inferior crops on **humus-deficient soil** by supplying all your plants' chemical requirements, mainly in the form of nitrates, out of a fertilizer bag, **but if you do this** your soil will progressively deteriorate and, ultimately, blow or wash away, as the topsoils of so much of the world's surface, abused by mankind, already have."

Emphasis and clarification comments in brackets [] added.