

# ALIEN PROPERTY CUSTODIAN

## COMPOSITION MORE PARTICULARLY FOR AGRICULTURAL USE

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This invention has for its chief object to provide an improved composition which is more particularly intended for agricultural use and which can be applied directly or indirectly for the purpose of accelerating and improving the growth of plants of all kinds.

A more specific object of the invention is to provide a composition comprising whey, skimmed milk and a nitrogenous substance which preferably has an oligodynamic effect on the germination and development of plant life.

Further objects and features of the invention will appear from the following description.

It is well known that ordinary unskimmed milk is caused to coagulate by the addition of rennet and the liquid remaining after the coagulum or curd has been removed is called whey. This whey is used industrially for the manufacture of a butter-milk cheese known as "ricotta." The term "whey" as used in the accompanying description and in the appended claim is, however, to be considered to mean the liquid from which "ricotta" has been made.

For the manufacture of butter the cream is removed from milk by any suitable means, such as for example by means of a centrifugal separator; the remaining liquid is known as "skimmed milk" and is that which is referred to throughout this Specification.

These two substances, the whey and the skimmed milk, constitute two of the essential ingredients of the composition according to the invention and are rich in micro-organisms which have an important biological action.

The third essential ingredient is a nitrogenous substance. This serves to feed the bacteria in the composition and is preferably so selected that it will, itself, assist the action of the mixture by having an oligodynamic effect on the germination and development of plant life by influencing the cell growth and the multiplying activity of the cell.

By admixing the aforesaid ingredients, preferably with the addition of water, a composition is obtained which has a number of important agricultural uses.

This liquid may be mixed with or applied, for example by sprinkling, to any organic refuse such as sweepings, algae, rags, leaves, vegetable residues, manure and the like and effect a substantial reduction in the time necessary for these substances to break down to form humus owing to its chemical and biological action.

Moreover, the humus thus formed has improved characteristics as compared with the

humus which is formed by natural decomposition. For one thing it causes seeds to germinate more rapidly while a quick growth of the young plants and better formation of the roots is obtained.

Seeds, sprigs, cuttings and the like can also be treated with the composition, when being planted, for the purpose of assisting their germination and growth, while the liquid can be sprinkled directly onto the land with the same object in view. Fertilisers, more particularly phosphorites, can advantageously be acted upon by the composition according to the invention, for it causes the tricalcic phosphates to be partly converted into monocalcic and bicalcic phosphates, the action being not only chemical but also, to an indeterminate extent, biochemical.

Organic refuse substances, such as the contents of cesspools and drainage can be treated with the composition and thereby constitute a product which, when used as a fertiliser, has a greatly improved effect as regards the germination and growth of plant life.

This treatment can be effected in any suitable means and in any suitable apparatus, such as the cells and other devices already known and used for the hygienic maturation of refuses.

A preferred composition according to the invention comprises a mixture of whey, skimmed milk, red haemoglobin and water. Apart from the water the major constituent is whey which can form between 15% and 45% of the whole.

The skimmed milk may constitute between 10% and 30%, while the haemoglobin is present to the extent of between 1% and 10%.

The following composition according to the invention has been found to be very satisfactory:

	Per cent
Whey .....	38.80
Skimmed milk.....	19.40
Red haemoglobin.....	2.90
Water.....	38.90

This composition can be prepared by dissolving the red haemoglobin in a sufficient quantity of water in a vat or mechanical stirrer. The latter should be operated for a sufficient time to ensure that the semi-liquid solution obtained is of uniform consistency.

At the same time, the whey and skimmed milk are introduced into another vat or stirrer which may be graduated. Preferably the whey is allowed to acquire the normal room temperature before being introduced into the vat. If the whey and skimmed milk mixture should give an

acid reaction it should be titrated with an alkali such as ammonia to obtain a mixture giving a slightly alkaline reaction.

When this has been done the mixture of whey and skimmed milk is slowly decanted with continuous agitation into the haemoglobin solution. After a further mixing to obtain a thoroughly homogeneous liquid, the remainder of the water is added, preferably in a third graduated vat.

The resulting solution is allowed to stand for ten to twelve hours after which it is again titrated and the hydrogenation concentration is

adjusted to give a Ph. value of approximately 7.3-7.5.

The product is then ready to use, or it can be put into cans for convenience in storage and transport.

If desired an antiseptic, such as toluol or potassium permanganate, may be added in order to prevent fermentation which might result in damage to the cans.

A suitable proportion of toluol is 500 cc. for each 10 kg. of the composition.

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