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Organic Fertilizers -Agricultural Revolution in Sri Lanka

Implementation to use organic fertilizer – move by the President of Sri Lanka

The “Vistas of Prosperity and Splendour” National Policy Framework affirms that in order to produce a healthy and productive citizenry, the government must ensure the right of the people to access a non-toxic and balanced diet.

Let us not get into the politics of organic fertilizer implementation for the usage in Sri Lanka, a current hot topic, and to understand from our point of view what this revolution means, from a scientific, health and eco-friendly, point of view.

Global climate change has an adverse effect on soil fertility, mainly the dry land in our dry zones. This is because of the increase soil temperature will fasten soil organic matter decomposition process and it will decrease soil organic matter content.

Plants require certain elements as nutrients for their growth, flowering and yielding the crops and fruits.

They are classified as Natural Nutrients, Primary nutrients, Secondary nutrients, and micronutrients.

Natural nutrients are carbon, Hydrogen and Oxygen.

Primary nutrients are Nitrogen, Phosphorus and Potassium, e.g., Urea: Mono Potassium Phosphate

Secondary nutrients- Calcium, Sodium, Sulphur, and Magnesium

Micronutrients: Copper, Molybdenum, Manganese and Cobalt, Zinc, boron, and iron

Synthetic fertilizers are not ecofriendly and the natural organic fertilizers being closer to nature, form part of the ecosystem.

Dramatic increase in synthetic fertilizers has increased crop yields, but also nitrous oxide emissions.

The excess nitrogen from synthetic fertilizers getting into the water in lakes and rivers can cause the fish to die,

Synthetic fertilizers are 'Man made' inorganic compounds- usually derived from by-products of petroleum industry. Examples are Ammonium nitrate, Ammonium Phosphate, Superphosphate, and potassium sulphate.

Organic fertilizers material derived from plant and animal parts or residues.

Examples are Blood meal. Compost. Cow manure, and worm castings.

So far, chemical fertilizers have been used in Sri Lanka for decades for agricultural purposes, and the unforeseen damages ended to the soil, environment and the health of the people are unmeasurable.

An issue in view is the high incidence of chronic kidney disease among farmers of the North Central Province of Sri Lanka, and after scientific testing and environment studies the scientists concluded that the high levels of the metals showing up in the blood and urine of the victims, suggested that the culprits were two toxic metals, cadmium, and arsenic- contaminating food and chronic exposure. This has not been still confirmed by the WHO.

They were present in the synthetic fertilizers and pesticides used in feeding and spraying the paddy fields, respectively.

Nitrogen, phosphorus, and potassium are the 'Big 3' primary nutrients in commercial fertilizers, and they play a key role in plant nutrition. Nitrogen is in one of the following forms: nitrate, ammonia, ammonium, or urea.

Nitrogen is the engine of agriculture.

Organically derived fertilizers often provide the secondary and micronutrient plants need, usually absent in synthetic fertilizers. Organically derived fertilizers have a lower nitrogen, phosphorus, and potassium than synthetic fertilizers, but they feed the plants for a much longer period.

Plants require 13 nutrients. The three primary macronutrients have been mentioned and the secondary nutrients are calcium, magnesium, and sulphur. The micronutrients used in small quantities are boron, copper, iron, chloride, manganese, molybdenum, and zinc.

Another nutrient that plants require is calcium. Egg shells contain plenty of calcium. If we have a project to collect all the eggshells from eggs that would be a good project to introduce a natural product as a nutrient to our plants, rather than using synthetic calcium.

In organic fertilizers these plant nutrients are found in low concentrations and cost more than chemical or inorganic fertilizers.

Both chemical and organic fertilizers restore the same vital nutrients to the soil, but in different ways.

Plants need nitrogen for green, leafy growth; phosphorus for fruits and strong roots; and potassium for bigger flowers and overall strength.

Plants do not know the difference between organic and inorganic fertilizers- they extract up nutrients from the soil the same way. When organic fertilizers decompose, it looks the same for the plants.

Plants need more than just nutrients mentioned., to survive. They also need organic matter and living organisms.

Synthetic fertilizers do not support microbiological life in the soil. The synthetic fertilizers kill a significant percentage of beneficial microorganism life in the soil. These tiny creators are responsible for the breaking down organic matter into stable amendment for improving soil quality (Ref: Jerry Gash Synthetic vs Organic Fertilizers)

Chemical makeup of each nutrient is the same from wherever they originate from- whether organic or synthetic. The synthetic fertilizers are engineered to be water soluble, that means that they are available for plants quickly when they meet water. So, if you want to get nutrients into plants quickly you use synthetic fertilizers. The downside is too much of a good thing is not a good thing.

Quick absorption of water-soluble synthetic fertilizers will kill your plants.

The advantage in organic fertilizers is that they contain lots of extra material such as composted plant fibres and minerals making the nutrients less concentrated. It is like our high fibre diets, making the nutrients less concentrated and slow absorption.

A good example is that cow manure is sold in Sri Lanka in bag with mixed up with straw- a good fibre ingredient.

Even if they are dropped down in excess the microorganisms will breakdown the nutrients and becomes part of the soil ecosystem and the good thing is that the organic nutrients are not strong enough to harm the plants.

On the other hand, the synthetic fertilizers, the nutrients from the chemical fertilizers can get absorbed to the extent that it can overdose and kill the plants, so good things in too much of a fertilizer is not a good thing.

Biofertilizer used now in Sri Lanka, is a 100% Natural and Organic product which can reduce chemical fertilizer usage by up to 50% and increasing yields by up to 10-15% while improving plant health with forms of Bio Control against pests and diseases.

The product is a 100% Sri Lankan value added product.

Carbonic fertilizers

The president of Sri Lanka is keen to introduce carbonic natural fertilizers, instead of spending large sums of money to use imported chemical fertilizers. Every plant contains a large proportion of carbon in its composition and this element is now generally admitted being derived from the atmosphere by means of leaves, despite the exceedingly small proportion of carbon percentage, to be found in fresh air. It is reasonable to suppose that, by increasing the percentage of carbon acid gas, in the air around growing plants, their growth will be accelerated.

Sri Lanka will soon be using carbonic fertilizers for paddy cultivation and other agricultural productions instead of imported chemical fertilizers.

In conclusion, Sri Lanka is going in the right direction by eliminating synthetic fertilizers with organic fertilizers and will be a prime model for other countries to follow, and the first country to eliminate chemical fertilisers.

Hope this video talk was useful.

Stay safe Goodbye for now.