

TGL-31-02 Fertilizer

The main area of productivity in Thailand is agriculture. Agricultural productivity supports the industrial sector with raw materials. The arability and quality of land are increasingly important as factors that affect the productivity. Fertilizers can help to increase productivity of an area of land. The amount of land used by the agricultural sector has been steadily decreasing because of the expansion of residential, industrial, and commercial areas. The improvement of agricultural productivity at present relies on fertilizers of which the majority is imported from foreign countries. This is true especially for those fertilizers containing Ammonium Phosphate and Urea. This situation means an imbalance in the economics of agricultural production. In addition fertilizers can effect the soil structure and the ecosystem when they are applied improperly.

The Green Label acts to support and reinforce the application of organic fertilizers and organic microorganisms and to discourage the use of imported chemical fertilizers.

Category Definition

The category includes organic fertilizers and organic microorganisms but does not include night soil.

Green Label Requirement

General Requirements

1. The product must pass the standard as defined in Fertilizer Act (B.E.) 2518 or its updated version
2. It must be manufactured, transported and disposed of in manner as required by government act and regulations such as Factory Act 1992.

Product Specific Requirements

Title/ Specific Requirement	Criteria	Method test
5.1 Specific requirements for organic fertilizer		
5.1.1 Characteristics of ferment fertilizer		
1). Organic matter content	Not less than 35 % (by weight)	BS EN 13039 Walkley and Black or comparable method
2). C : N ratio	Less than 20 : 1	BS 7755-3.8 (ISO10694)
3). Electrical Conductivity	Lower than 3.5 decicemen per meter	BS EN 13038 or comparable method
4). pH	5.5-8.5	AOAC 973.04 BS EN 13037 or comparable method
5).Content of food element for plant; total Nitrogen”	Not lower than 1.0- 0.5-0.5 (by weight)	AOAC 955.04 AOAC 993.31

P ₂ O ₅ , K ₂ O		AOAC 983.02 or comparable method
6). Humidity and volatile matter	Must not exceed than 35 % (by weight)	AOAC 950.01 BS EN 13040 or comparable method
7). Dimensions	10*10 mm	CATM 01 or comparable method
8). Others no need such as stone gravel sand plastic	Must not exceed 3% (by weight)	CATM 01 or inspection
9). Dangerous matter such as sharps an metal is dangerous and will contaminate soil	No adulterate	CATM 01 or inspection
10). Heavy metal and toxic - Cadmium - Lead - Mercury	Mg/kg Must not exceed 5 Must not exceed 500 Must not exceed 2	USEPA 3050B or comparable method
5.1.2. The characteristic of manure Fertilizer		
1). Heavy metal and toxic - Cadmium - Lead - Mercury	Mg/kg Not exceed 5 Not exceed 500 Not exceed 2	USEPA 3050B or comparable method
2). Microorganism disease to human, animal and plant	Must not have yeast and Bacteria	Dilution Method or approval evident
3). Electrical Conductivity	Not less than 3.5 Dcm/meter	BS EN 13083 or comparable method
4). Quantity of food element for N “total Nitrogen” P ₂ O ₅ , K ₂ O	Not less than 1.0-0.5-0.5 (by weight)	AOAC 955.04 AOAC 993.31 AOAC 983.02 or comparable method
5). Quantity of organic	Not less than 35% (by weight)	BS EN 13039 Walkley and Black or comparable method
6). Humid and evaporate	Not less than 35 % (by weight)	AOAC 950.01 BS EN 13040 or comparable method
5.2 Specific requirements for bio-fertilization		
5.2.1 Characteristic of Bio-fertilization Spilulina		
1). Component the spilulina		Examine
2). Specify the spilulina component the bio-fertilizer		Examine
3). Specify the number of spilulina	Not less than 10 ⁵ cell/gram (dry weight)	Examine and certificate
4). Carrier	-	Examine
5). Humid	Must not exceed 20 %	AOAC 950.01 BS EN 13040
6). tablets Character	Diameter not less than 2 mm	CATM 01
7). Heavy metal and toxic	mg/kg	USEPA 3050B

- Cadmium - Lead - Mercury	Must not exceed 5 Must not exceed 500 Must not exceed 2	
8). Microorganism disease to human, animal and plant	Must not have contaminate	Dilution Method
9). Put in gunny bag 2 layer first layer is plastic solidly constructed and protected from humidity and must show the expiry date on the product		Examine
5.2.2 Characteristics of Bio-fertilizer Lisobium		
5.2.2.1 Characteristics of Bio-fertilizer Lisobium Type powder (not fertilization)		
1). Specific name of Lisobium nut	Specify type of nut rise by Lisobium	Examine
2). Quantity of Lisobium	Not less than 10^7 per gram by product (dry weight)	Examine Certificate
3). Have goods pad	Pass screen 80mm	CATM 01
4). pH	6.5-7.0	AOAC 973.04 BS EN 13037
5). Humid	40-50 % by weight	AOAC 950.01 BS EN 13040
6). Put in container to protect from humidity		Examine
7). Heavy metal and toxic - Cadmium - Lead - Mercury	mg/kg Not exceed 5 Not exceed 500 Not exceed 2	USEPA 3050B
8). Microorganism disease to human, animals and plants	Must not have contaminate	Dilution Method
5.2.2.2 Characteristics of Bio-fertilizer Lisobium Type powder (fertilization)		
1). Specific name of Lisobium nut	Specific type of nut rise by Lisobium	Examine
2). Quantity of Lisobium	Not less than 10^7 per gram by product (dry weight)	Examine Certificate
3). Have goods pad	Pass screen 80 mesh	CATM 01
4). pH	6.5-7.0	AOAC 973.04 BS EN 13037
5). Humid	40-50 % by weight	AOAC 950.01 BS EN 13040
6). Put in container protect humid		Examine
7). Heavy metal and toxic - Cadmium - Lead - Mercury	mg/kg Not exceed 5 Not exceed 500 Not exceed 2	USEPA 3050B
8). Microorganism disease to human, animal and plant	No contaminate	Dilution Method

5.2.2.3 Characteristics of Bio-fertilizer Lisobium (Type liquid)		
1). Specific name of Lisobium nut	Specific type of nutrient by Lisobium	Examine
2). Quantity of Lisobium	Not less than 10 ⁷ per gram by product (dry weight)	Examine or Certificate
3). Pack in good container		Examine
4). Heavy metal and toxic - Cadmium - Lead - Mercury	mg/kg Not exceed than 5 Not exceed than 500 Not exceed than 2	USEPA 3050B
5). Microorganism disease to humans, animals and plants	No contaminate	Dilution Method
5.2.3 Characteristics of Bio-fertilizer Micorza germ		
1). Specify name of product have Micorza germ	-	Examine
2). Specify type of Micorza germ	-	Examine
3). Specify type of plant can use the product	-	Examine
4). Quantity of germ	Not less than 25 % / gram of product	Examine or certificate
5). Specify material support	-	Examine
6). Humid	Not exceed 20 % (by weight)	AOAC 950.01 BS EN 13040
7). Size of powder Size of tablet	Not less than 60 Dimension 2-6 mm	CATM 01
8). pH	5.5-9.0	AOAC 973.04 BS EN 13037
9). Heavy metal and toxic - Cadmium - Lead - Mercury	mg/kg Must not exceed 5 Must not exceed 500 Must not exceed t2	USEPA 3050B
5.2.4 Characteristics of Bio-fertilization microorganism dissolved phosphate		
1). Component by microorganism dissolved phosphate plant can use		Examine
2). Specify type of microorganism dissolved in phosphate		Examine
3). Specify quantity of spore or germ microorganism	Not less than 10 ⁷ / gram (dry weight) or ml of product	Examine
4). Specify material support	-	Examine
5). Humidity (in case product is tablet or powder)	Not exceed 20% (by weight)	AOAC 950.01 BS EN 13040
6). Heavy metal and toxic - Cadmium	mg/kg Not exceed than 5	USEPA 3050B

- Lead - Mercury	Must not exceed 500 Must not exceed 2	
7). Microorganism disease to humans, animals and plants	No contaminate	Dilution Method

Remark: AOAC = Official Methods of Analysis of AOAC International (AOAC)
 BSI = British standard Institution (BSI)