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Liquid Organic Manure

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Liquid organic manure are products obtained from fermentation or decomposition of organic matter such as Liquid organic manures are products obtained from the Liquid organic manures provide nutrients and hormones for crop residues, animal dung, urine and other plant materials. Liquid organic manure provide nutrients and hormones for the plant growth and also work for pest control.

Need of aerated liquid organic manures

Aerated liquid organic manure provides macro and micro nutrients in balanced and available form for plant growth, development and good crop yield. Aeration during fermentation process of liquid organic manure increases the decomposition and oxidation rate which tends to increase high microbial and enzymatic activity. Aeration of organic liquid organic manure increases availability and quantity of almost all micro and macro nutients and antioxidants.

Production Technology

1. Aerated Panchgavya

A. Raw material used :

Cow dung: 15 kg
Cow urine: 9 lit
Cow milk: 6 lit
Cow ghee: 3 kg
Jaggery: 1.5 kg

B. ratio of raw material used :

Dung : urine : milk : curd : ghee = 5:3:2:2:1

C. Mixing :

- **Ist Phase:** mix cow dung and cow ghee in tank and keep it for 3 days
- **IIst Phase:** add the remaining raw materials of cow VIZ; cow urine, cow milk and cow curd along jaggery in the tank and properly incubate the mixture for next 17 days
- **IIIst Phase :** After 20 days, panchagvya is ready for use.

D. Incubation

- Incubation for 3 days during Ist Phase
- Incubation for 3 days during IIst Phase

E. Aeration :

- **Tpyes of machine used:** Aerataed panchgavya preparation machine
- **Aeration:** approximate 0.8 m3/hr, 25 KP pressure
- **Duration & Frequency of aeration:** Thrice for 20 minutes at interval of 3 hours.

F.Material produced in one batch: 20 kg

G. Cost of Production : Rs. 3600

H. Cost of Machine : Approx Rs. 7000
I. Total cost : Rs. 10,600
Use

- ❖ 3% solution of Panchgavya is used
- ❖ Panchgavya is used to promote plant growth, flowering & yield, disease resistant and soil fertility

2. Aerated jeevamrit
A. Row material used:
Water: 50 Lit
Cow dung : 2.5 Lit
Cow urine :1.25 Lit
Jaggery :500 gm
Pulse flour : 500 gm
Live soil : 250 gm
B. Ratio of raw materials: 50 : 5 : 5 : 1 : 1 : 0.5
C. Methodology: Mix 2.5 kg of fresh desi cow dung and 1.25 litres of cow urine in 45 lit water; to this 500g of jaggery, 500g of pulse flour and a handful of live soil from under canopy of the banyan tree (about 250g) are added. Stir the solution well. After 5 days jeevamrit is ready for application.
D. Incubation: Jeevamrit is ready after 5 days from preparation.
E. Aeration:

- Type of Machine used: Air agitation
- Aeration: Approximate 2.5 m 3 A i r / h r , 25 K P a pressure
- Duration & frequency of aeration: Thrice for 20 minutes at interval of 3 hours.

F. Material produced in one Batch: 50 lit
G. Cost of Production: Rs. 500
H. Cost of Machine: Approximate Rs. 7000
I. Total cost: Rs. 7,500
Use

- Jeevamrut is considered to be an excellent source of 'carbon', 'Nitrogen', 'Phosphorous' 'Potassium' and other micro nutrients and enzymed required for the crops.
- Acts as an agent to increase the microbial count & friendly microbes in the soil.
- Suitable for all crops and increases the yield.
- Reduces costs of chemical fertilizers.
- Earthworm count increases in the soil.

3. Aerated Compost Tea
A. Row material used:
Compost : 3 kg
Water : 45 lit
B. Ratio of raw materials: 1 : 15
C. Methodology: 3 kg compost filled in a small cloth and hanged over an plastic tank filled with 45 litre water in a way that compost remained submerged in water. Aeration is done properly. The nutrients in the compost come outside in the water through osmosis process. After 10 days, solution is taken out and was filtered through fine cloth.
D. Incubation: Compost tea is ready after 10 days from preparation.
E. Aeration:

- Type of Machine used: Air agitation
- Aeration: Approximate 2.5 m 3 A i r / h r , 25 K P a pressure
- Duration & frequency of aeration: Thrice for 20 minutes at interval of 3 hours.

F. Material produced in one Batch: 45 lit
G. Cost of Production: Rs. 400
H. Cost of Machine: Approximate Rs. 7000
I. Total cost: Rs. 7,400
Use:

- 10% solution of compost tea is used.
- Maximum benefits are achieved with thorough leaf coverage.
- Provides nutrients to the crop.
- Additional microbes for the soil if soil application is done.

4. Aerated Mataka Khad
A. Row material used:
Cowdung: 15 Kg
Cowurine: 15 Lit
Water: 15 lit
Jaggery: 250 g
B. Ratio of raw materials: 1 : 1 : 1
C. Methodology: 15 kg of cow dung, 15 litre cow urine, 15 litre water and 250g of jiggery are thoroughly mixed and put in tank of 50 litre capacity. Keep it for 10 days.
D. Incubation: Mataka Khad is ready after 10 days from preparation.
E. Aeration:

- Type of machine used:Air agitation
- Aeration : Approximate 2.5 m 3 Air / hr , 25 KP a pressure
- Duration & frequency of aeration: Thrice for 20 minutes at interval of 3 hours.

F. Material produced in one Batch: 45 lit
G. Cost of Production: Rs. 600
H. Cost of machine: Approximate Rs. 7000
I. Total cost: Rs. 7,600
Use:

- It promotes higher plant growth and productivity in plants.
- It contains higher microbes.
- Mataka Khad is used @ 20% solution.
- Suitable for all crops.
- Reduces use of chemical fertilizers.

Table : Chemical properties of different aerated liquid organic manure

Liquid organic manure		pH	EC(ds/m)	N(%)	P(%)	K(%)
Panachgavya	Aerated	6.06	1.31	0.477	0.419	0.963
	Non Aerated	6.42	1.65	0.935	0.287	0.687
Matkakhad	Aerated	7.05	1.02	0.485	0.201	0.502
	Non Aerated	7.45	1.90	0.339	0.121	0.358
Jeevamrit	Aerated	5.02	0.49	1.879	0.232	0.299
	Non Aerated	5.62	0.65	0.967	0.201	0.203
Compost Tea	Aerated	7.32	0.33	0.461	0.157	0.493
	Non Aerated	7.69	0.76	0.216	0.111	0.385