

A tropical landscape featuring a calm river or stream in the foreground, reflecting the surrounding lush greenery. On the left bank, there are several palm trees and other tropical plants. The background is filled with dense, vibrant green trees and foliage under a clear sky. The overall scene is peaceful and natural.

Vanilla—organic Cultivation with special Reference to manuring

VanamOrchids-V.K.JAGANNATHAN

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The vanilla producer company

Introduction

- Vanilla grows attached to a support plant under shade.
- For successful cultivation lot of organic matter need to be applied.



- Grown in tropical countries but consumed in European and North American countries; Consumers prefer organic vanilla and pay more than 70% premium.



- Vanam Farms certified organic, vanilla is successfully grown with high productivity.

Mixed farming - key to sustainability:

- To make vanilla cultivation more sustainable grow it as mixed crop.
- Use gliricidia , erythrina, arecanut, coconut, teak, cashew nut, casurina or even natural forest trees as support/shade trees.
- Mixed farming - less production cost, economically also sustainable
- Shade net cultivation – costly, not sustainable















Ideal manure



- Vanilla roots need good aeration.
- Semi degraded compost of fibrous material like coir pith ideal

Vanam method of composting is the best way to compost



Vanam Method of Composting

1. On a level location, mark an area of 1.8 m (6 feet) width and 8 m (26 feet) length.
2. Construct a mud bund to a height of about 10 cm (4 inches) on all the four sides of the marked area.



3. Spread a black HMHDPE (90 gauge thick) plastic sheet of 2.7 m (9 feet) width over the built-in area, so that a shallow tank is formed.





Any biodegradable material could be composted. If dry, pre wet it.



4. Over the plastic sheet, construct the heap to about 1m height. If necessary, chop the material to 5 cm length. At the end, the two sides of the heap should converge at the top.



5. If necessary, water is sprinkled after each set of layers is made, so that the moisture content in the material is about 70 per cent and also, that about 2.5 cm (one inch) height of water accumulates at the bottom of the heap.

Compost recipe for different materials (quantity in kg)

	Combination	I layer	II layer	III layer	IV layer	V layer
1	Dr. L./Fr.L./W.Pl./ Ag.W.	250 Dr.L./ Fr.L./W.Pl./Ag.W.	0.5 V.C	25 O.K./250 FYM/125 CD.	2.5 R.P.	Repeat
2	Ar.H.+Ar.L.	250 Ar.H + Ar.L. (mix)	0.5 V.C.	2.5 Ur/ 25 O.K./250FY M /125 C.D.	3.75 R.P.	Repeat
3	FYM	250 FYM	0.25 V.C.	2 R.P.	Repeat	
4	FYM+Fr.L./Dr.L.	250 Fr.L./Dr.L.	0.5 V.C.	250 FYM	5 R.P.	Repeat
5	C.P.+P.M.	250 C.P.	0.75 V.C.	125 P.M.	Repeat	
6	P.M.+Fr.L./ Ag. W	250 Fr.L./Ag.W	0.75 V.C.	125 P.M.	Repeat	

Ar.H. : Areca husk; Ar.L.- Areca Leaf; V.C. – Vanam Composter; FYM – farm yard Manure; R.P. – Rock Phosphate(with 18-20% P₂O₅ in case of higher content reduce the quantity); Ur. – Urea; Fr.L. – Forest Leaves; Dr.L. – Dry Leaves; O.K. – Neem/Castor cake; C.D. – Cow Dung; C.P. – Coir Pith; P.M. – Poultry Manure; W.Pl.- Weed plants; Ag. W- Agriculture/Agro-industrialWastes



6. The heap is covered fully with the black HMHDPE sheet and made secure by pressing wet mud along the base of the heap. The sheets are further covered using coconut or areca leaves/dry grass so as to protect them from deterioration due to UV- rays of sunlight. Heaps under natural shade do not require the additional covering.





7. Heat develops inside the heap within 2-4 days of heaping. After a month, remove the plastic cover and give a turning to the heap material, without damaging the sheet below (i.e. without disturbing 5-10cm of the material at the bottom). If dry, moist the material. Semi degraded compost is ready within 2-3 months.



8. For annual crops, a narrower C:N ratio could be obtained either by extending the composting duration (5-6 months) or by giving two-three turnings. This operation is also necessary when the material is suspected to contain pathogenic organisms.

The major advantages of Vanam Method of Composting includes :

1. Because of the plastic lining to the whole heap, there is
 - (i) higher retention of nutrients;
 - (ii) higher ratio of the composted material to the raw material and
 - (iii) consequently; a perceptible increase in the total quantity of the nutrients recovered per unit mass of the original material.
2. As the method does not involve the use of soil, the net weight of the organic matter in the mass is high.

3. Compost is ready for use within a short period.
4. The method is amenable for multiplication of beneficial organisms such as *Trichoderma*, *Azotobacter*, P-solubilizing bacteria etc. which are added as Varanashi Composter.



Right quantity and right time of manuring

- For planting of Vanilla, beginning of the monsoon is most ideal.
- At the time of planting, about 10-15 kg of semi-degraded compost (2-3cm thick) is applied.

Repeat 10-15 kg
application
in the month of
September-October



- Spread thin litter mulch immediately after monsoon.



Mature vines: 20-30 kg
(2-3cm thick) of compost
application when the
pollination of the flowers
begin in the month of
February-March



Manuring matured vines



- Less compost quantity at low rainfall areas
- Compost could be given in 2-3 split doses.
- Cakes like castor cake and neem cake use boosts the Growth; apply $\frac{1}{4}$ - $\frac{1}{2}$ kg per application and 1-2 application per year during summer months.

Nutrient Spray boosts the growth :

- The aerial roots and foliage absorbs the nutrient.
- During summer months, nutrient spray can be given once in 7-10 days.
- Cattle urine diluted 10 times sprayed, alternatively or in the absence of cattle urine Bio-spray could be sprayed.



- Biogas slurry (about 1:4) could be used to feed the root zone once in 30-60 days.



- Avoid manuring and nutrient spray just before and during heavy rains; also, after September when the plants need to be prepared for reproductive phases.



Organic and Mixed farming -Minimum pest & diseases:

- At our Farms, the pest problems are minimum compared to the other farms.
- Insect pests controlled by birds and other natural enemies
- Mechanical control is also ideal
- Use organic pesticides/ repellents if really needed
- For fungal problem, especially for *Phytophthora* rot during rainy season
1% Bordeaux spray



Organic farming is the key to sustainability

- Organic farming is much cheaper and more sustainable



- Grow as many crops as possible and make farming near to forest eco-system

- The land that has come to us should be properly utilized and passed on to next generation in a sustainable condition.

Vanilla Research Foundation

R&D Organisation promoting eco-friendly and sustainable agriculture.

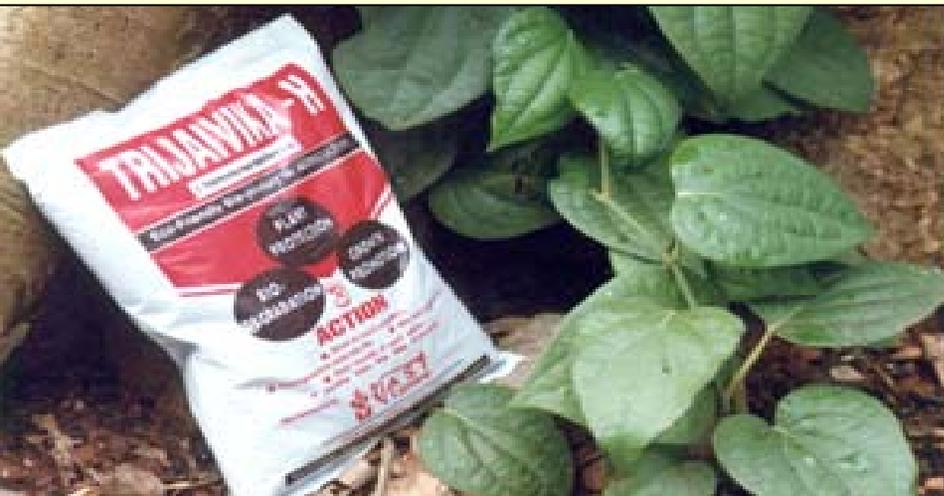


Recycling Agro-Industrial wastes.



Water Harvesting

Bio-control agents



Silviculture



Vanilla Workshops-2009

**For practical on farm information on vanilla
Cultivation and processing, water harvesting
and organic farming attend our one day
workshops**



- Vanilla cultivation and curing seminar on Feb 2009.

For information please contact
our office or email.

Details also can be had from Mr. Tanny Lee in Kuching, Malaysia.



THANK YOU