DR. RAMANAIDU EKALAVYA FOUNDATION

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Comprehensive detail of Our KVK's organic practices v/s inorganic practices of Kerala Agricultural University

S.No.	Particulars	Organic Practices under Polyhouse	Inorganic Practices under Polyhouse
1.	Field Preparation	➢ Prepared raised beds after ploughing and rotavating of soil. ➢ Bed size is 1.6 m width, 25 m length and 0.15 m height.	➢ Ploughed the soil 4 to 5 times till the fine tilth of soil ➢ Prepared small plots with the size of 2.5 x 1.5 m.
2.	Seed Treatment	➢ Seeds treated with Trichoderma viridi or Pseudomonas fluorescens @ 8-10ml per kg seeds and shade dry for 30 minutes.	➢ Treated with Carbendizm or mancozeb @ 2 to 3g per kg seeds
3.	Seed sowing and Spacing	➢ Amaranthus, palak and coriander – Line sowing and row to row distance – 15 cm	➢ Followed line sowing with closer spacing in Amaranthus, Palak and Coriander
4.	Method of Irrigation	➢ Drip Irrigation (Inline drip with 20cm distance)	➢ Irrigated with Rose can
5.	Nutrition	**Organic Manures:** ➢ Applied 8 tons of FYM, 2 tons of vermi compost and 250 kg of neem cake per acre on raised beds in first cycle and mixed well in soil. ➢ Add half of the quantity from 2nd to 5th cycle. ➢ Approximately 3.94 kg of organic manures are added per sq. m in first cycle. ➢ After application of organic manures, raised beds drenched with Humic acid @ 5ml/lt	**Organic Manures:** ➢ Applied FYM 10 tons per acre ➢ Foliar sprayed with supernatant solution of fermented Neem-cake, ground nut, FYM & Vermi wash were given at weekly Intervals. **Chemical Fertilizers:** ➢ Applied 40 kg urea, 100kg SSP and 40 kg MOP as basal dose ➢ Top dressed with water soluble fertilizers.

		Bio fertilizers: ➢ All liquid bio fertilizers (Aztobacter, Phosphorous Solubilizing bacteria, KSB, ZnSB, Silica, SOB) mixed in 200 lit drum individually @ 2ml/lt and drenched on raised beds which will enhance the uptake of macro & micro nutrients by plant. **Organic Nutrient Solutions:** ➢ foliar spraying – Panchagavya @ 20ml/lt, Fish amino acid @ 10ml + Egg amino acid @ 10ml/lt is sprayed at 10, 15 & 20 days after sowing. As per this schedule, the leafies grows well and comes to harvest at right time with good quality. ➢ Although, the beds are drenched with Jeevamrutham (1:9) and Waste decomposer (1:9) for 3 times with 3-4 days intervals after 10 days of sowing.	
6.	Plant Protection	➢ Before 2 to 3 days of sowing, beds are drenched with the solution of Microbial pesticides (Bacillus subtilis, Metarhizium anisopliae and Verticillium lecanii) @ each 5ml/lt, Cow urine @ 10ml/lit and Fermented butter milk @ 100ml/lit mixed into 200 lit of drum and add 1	➢ Prophylactic sprays of pseudomonas were given thrice at 10 days Intervals. ➢ Sprayed carbendizm + Mancozeb@ 2g per lit for leaf spots. ➢ Drenched with copper oxy chloride @ 3g per lit to control damping off and wilt diseases.

		kg jaggery and kept this mixture for 24 hrs for multiplication of microbes. ➢ Before 24 hrs of sowing, soil application of Entamo Pathogenic Fungicides (Trichoderma viridi, Pseudomonas fluorescens, Beauveria bassiana) @ each 5ml/lit ➢ **Effect: More leaf area; leafies grew well and came to harvest at correct time with excellent quality**. ➢ The same mixture is used for foliar spraying at 7, 15 & 20 days after sowing for the management of leaf spots, sucking pests and leaf eating caterpillar. ➢ Spray Neem oil + Custard apple oil @ 2ml/lit at 15 and 20 days after sowing for management of sucking pest and leaf eating caterpillar.	➢ Sprayed Malathion @ 2ml per lit to control leafy eating caterpillar and sucking pests.
7.	Crop duration	**One time harvest:** ➢ Amaranthus – 25 days ➢ Palak – 25 to 30 days ➢ Coriander - 35 to 40 days	**Multi cut type:** ➢ Amaranthus – 79 days (First harvest at 31 DAS Remaining 3 harvests with 16 days Intervals) ➢ Palak – 63 days (First harvest at 39 DAS and remaining two harvests with 12 days Intervals) **One time harvest:** ➢ Coriander - 50 days
8.	Method of	➢ The method of harvesting is	➢ Only leaves are plucked from

	Harvesting	uprooting of plant along with roots. ➢ We spray Panchagavya @ 20ml/lt before 12-24 hrs of harvesting for extending freshness of leaves after harvest.	Amaranthus and palak Instead of uprooting of whole plant as these are multi cut type ➢ Coriander is uprooted along with roots.
9.	Post harvest operations	➢ Harvested the plants and dipped roots portion in water for 5-10 minutes to removing the adhered soil particles. ➢ Shade dried for 5-10 minutes to removing the excess moisture. ➢ Grading ➢ Trimmed the excess roots ➢ Prepare 200gr bunches and packed with MAP (Modified Atmosphere Packaging) covers ➢ To drastically reduce the notorious leafy post-harvest losses we have used MAP (Modified Atmosphere Packaging) technology which has become affordable at present. ➢ MAP retained the freshness of the leaves for 48 hours.	➢ Made into small bunches and marketed.

10. Yield

S. No	Crop Name	No. of Harvest		Harvesting Intervals (Days)		Crop Duration (Days)		Yield /Sq.m (KGs)		Yield per acre (Tons)	
		Organic	Inorganic	Organic	Inorganic	Organic	Inorganic	Organic	Inorganic	Organic	Inorganic
1.	Palak	1	3	-	12	25-30	63	2	1.05	5.2	2.73
2.	Coriander	1	1	-	-	35	50	1	0.44	2.6	1.14
3.	Amaranthus	1	4	-	16	25	79	0.87	0.8	2.26	2.08

Note: Reference for Inorganic method of leafy vegetable cultivation

1. Sheeba Rebecca Isaac. 2015. Performance Evaluation of Leafy Vegetables in Naturally Ventilated Poly houses. *International J. of Research studies in Agri. Sci. 1 (3): 1-4.*