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Response of organic manures and liquid biostimulants on growth, yield and economics of broccoli (*Brassica oleracea* L. var. *italica*)

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Abstract

The present investigation was carried out on “Response of organic manures and liquid biostimulants on growth, yield and economics on broccoli (*Brassica oleracea* L. var. *italica*)” at Horticultural Research Farm, Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand during *rabi*, 2021-22. The experiment was laid out in Randomized Block Design replicated thrice with fifteen treatments which included different components *viz.*, *Jeevamrut*, Farm yard manure, Vermicompost and *Anubhav Bio-NPK* in different combinations with different compositions. Among all the different treatments application of i.e. Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + *Jeevamrut* @ 3% (Drenching and Foliar spray at 30 and 60 DAT) + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT) had manifested its effect on growth attributes significant and produced significantly earliness in curd initiation and maturation, curd diameter and weight and in term high curd yield (13.31 t/ha) as well as net realization. However, treatment of (Farm yard manure 20 t/ha + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT) had also given highest BCR (7.20) due to lower treatment cost but lower yield (11.95 t/ha).

Keywords: Broccoli, FYM, vermicompost, *Jeevamrut*, *Anubhav Bio-NPK*

Introduction

Broccoli has a unique place among vegetables and is an important winter season vegetable crop that resembles cauliflower. Broccoli (*Brassica oleracea* L. var. *italica*) is a member of the cole group and belongs to the Brassicaceae family. It is not yet widely known in India. It is still grown in a very limited and dispersed area nearer to major cities and at many high altitudes. However, it is primarily grown in Uttar Pradesh, Jammu and Kashmir, the Nilgiri Hills, and India's northern plains (Chadha, 2001) [2]. Broccoli is one of the most important and popular vegetable crops in many countries due to its high nutritive value and good organoleptic properties. There is a growing concern through the world on adverse effect of indiscriminate use of inorganic fertilizer, pesticide, herbicide, etc. on the environment and human health. Bio-fertilizer and organic manure not only balance the nutrients supply but also improve the physical, chemical and biological properties of soil. Vermicompost provides vital macro and micro nutrients. *Jeevamrut* is low cost improvised preparation that enriches the soil with indigenous microorganisms required for mineralization from native. Now a day the people are more concerning about health and through more attracted to the organically produced production. Thus, keeping these views in present experiment was conducted with aim to produce good quality broccoli with sustainable production.

Materials and Methods

A field experiment was conducted during *Rabi*, 2021-22 at Horticultural Research Farm, Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand on “Response of organic manures and liquid biostimulants on growth, yield and economics of broccoli (*Brassica oleracea* L. var. *italica*)”. The details of material used and the agro technology adopted in the present investigation are presented here under following subheads. The climate of Anand region is sub-tropical type. Winter is mild cool and dry, while summer is hot and dry. The soil of middle Gujarat region and is locally known as “*Goradu*” soil. The texture of the soil is loamy sand, very deep and moisture-retentive, belongs to the soil order Inceptisols (*Typic Ustochrept*) Soil pH is 8.20 and EC is 0.34 dSm⁻¹.

The treatments consist of different combinations of various organic sources of nutrients such as FYM, Vermicompost, *Jeevamrut* and *Anubhav Bio-NPK* having various compositions. All the organic manures were applied 15 days before transplanting as FYM and Vermicompost while bio-stimulants *Jeevamrut @ 3%* and *Anubhav Bio-NPK @ 1 lit./ha*. As drenching and foliar spray at 30 and 60 DAT respectively. Total fifteen treatments were tested in Randomized block design.

Five plants were tagged at random in each treatment of respective replication for recording vegetative growth

attributes. The mean data recorded on plant height, number of leaves per plant, stem diameter of main stem, leaf width, leaf length and leaf area, days to 50% curd initiation, days to curd harvest, diameter of curd, weight of curd and yield of main curd per hectare.

Economic of the experiment was worked out on the basis of prevailing market prices of input and output. The recorded data were statistically analysed using analysis of variance as formulated at 5% level of significant (Panse and Sukhatme (1967) [9]. While DNMRT done for only yield of find out precise results.

Treatment combination

Sr. No.	Symbol	Treatments details
1.	T ₁	Farm yard manure @ 30 t/ha
2.	T ₂	Vermicompost @ 7.5 t/ha
3.	T ₃	Farm yard manure @ 25 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT)
4.	T ₄	Vermicompost @ 6.25 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT)
5.	T ₅	Farm yard manure @ 25 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
6.	T ₆	Vermicompost 6.25 @ t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
7.	T ₇	Farm yard manure @ 20 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT)
8.	T ₈	Vermicompost @ 5 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT)
9.	T ₉	Farm yard manure @ 20 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
10.	T ₁₀	Vermicompost 5 @ t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
11.	T ₁₁	Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT)
12.	T ₁₂	Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
13.	T ₁₃	Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT) + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
14.	T ₁₄	Farm yard manure @ 30 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT) + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)
15.	T ₁₅	Vermicompost @ 7.5 t/ha + <i>Jeevamrut @ 3%</i> (Drenching and Foliar spray at 30 and 60 DAT) + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)

Results and Discussion

Growth parameters

The data presented in Table 1 and 2 revealed significant variation among the treatment on vegetative growth attributes. Maximum plant height at 30 DAT (33.62 cm), 60 DAT (73.60 cm) and at harvest (73.63 cm), maximum number of leaves per plant at 60 DAT (22.80) and at harvest (22.93), highest stem diameter (44.93 mm) at harvest stage, maximum leaf width (17.29 cm) at 30 DAT, (28.57 cm) at 60 DAT and (28.71 cm) at harvest, maximum leaf length (21.98 cm) at 30 DAT, (38.59 cm) at 60 DAT and (38.71 cm) at harvest and maximum leaf area (228.42 cm²) at 30 DAT, (735.23 cm²) at 60 DAT and (738.57 cm²) at harvest was recorded in treatment FYM @ 15 t/ha + VC @ 3.75 t/ha + *Jeevamrut @ 3%* (D & F at 30 and 60 DAT) + *Anubhav Bio-NPK* (D & F at 30 and 60 DAT) followed by T₁₅, T₁₄ and T₁₂ but statistically very close to each other.

The minimum plant height at 30 DAT (28.29 cm), 60 DAT (66.24 cm) and at harvest DAT (66.27 cm), minimum number of leaves per plant at 60 DAT (18.27) and at harvest (18.40), minimum stem diameter (35.20 mm), minimum leaf width (15.02 cm) at 30 DAT, (25.25 cm) at 60 DAT and (25.27 cm) at harvest, minimum leaf length (18.28 cm) at 30 DAT, (34.06 cm) at 60 DAT and (34.20 cm) at harvest, minimum leaf area (183.06 cm²) at 30 DAT, (657.36 cm²) at 60 DAT and (660.69

cm²) at harvest as well as was noted in T₂ (Vermicompost @ 7.5 t/ha).

The results also indicated that significant integrate effect of FYM, Vermicompost, *Jeevamrut* and *Anubhav Bio-NPK*. Among the treatment *Anubhav Bio-NPK* exhibited positive effect in treatments. This increased in growth attributes might be due to integrated effect of FYM, VC, bio-fertilizer and *Jeevamrut* because organic manure enhances soil aggregation, aeration and water holding capacity gave more available form of nutrients. Biofertilizers may be attributed to the fact that the biofertilizers are known to synthesize the growth promoting substances besides nitrogen fixation, as a result of this, the plant has shown luxurious growth. *Jeevamrut* significant effects were ascribed to a higher microbial load and growth hormones, which may have increased soil biomass, hence maintaining the availability and uptake of applied and native soil nutrients, resulting in better crop growth. This outcome is consistent with the findings of Lal *et al.* (2015) [6] in broccoli, Bhushan and Sharma (2017) [1] in broccoli, Kumar *et al.* (2017) [5] in broccoli, Meena *et al.* (2017) [7] in broccoli, Pawar and Barkule (2017) [8] in cauliflower, Hameedi *et al.* (2018) [3] in broccoli, Rawat and Maji (2018) [10] in broccoli, Riba *et al.* (2018) [11] in cabbage and Singh *et al.* (2018) [12] in broccoli.

Table 1: Effect of organic manures and liquid bio stimulants on plant height and stem diameter of broccoli

Tr. No.	Treatments details	Plant height (cm)			Stem diameter (mm)
		30 DAT	60 DAT	At harvest	
T ₁	Farm yard manure @ 30 t/ha	28.84	66.39	66.41	36.20
T ₂	Vermicompost @ 7.5 t/ha	28.39	66.24	66.27	35.20
T ₃	Farm yard manure @ 25 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT)	29.37	67.43	67.46	36.40
T ₄	Vermicompost @ 6.25 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT)	30.13	67.82	68.17	37.60
T ₅	Farm yard manure @ 25 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	29.47	67.22	67.23	37.07
T ₆	Vermicompost @ 6.25 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	29.34	68.29	68.30	36.27
T ₇	Farm yard manure @ 20 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT)	29.29	68.17	68.18	37.27
T ₈	Vermicompost @ 5 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT)	29.53	67.64	67.65	37.47
T ₉	Farm yard manure 20 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	30.96	68.62	68.75	39.00
T ₁₀	Vermicompost @ 5 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	29.50	68.69	68.74	38.40
T ₁₁	Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT)	30.97	68.70	68.97	40.68
T ₁₂	Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	31.30	71.93	71.95	41.20
T ₁₃	Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT) + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	33.62	73.60	73.63	44.93
T ₁₄	Farm yard manure @ 30 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT) + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	31.90	72.53	72.59	43.40
T ₁₅	Vermicompost @ 7.5 t/ha + <i>Jeevamrut</i> @ 3% (Drenching and Foliar spray at 30 and 60 DAT) + <i>Anubhav Bio-NPK</i> (Drenching and Foliar spray at 30 and 60 DAT)	30.51	72.54	72.58	42.87
	S. Em. ±	0.82	1.66	1.60	0.91
	C.D. at 5%	2.37	4.80	4.64	2.64
	C.V. (%)	4.68	4.16	4.01	4.06

Table 2: Effect of organic manures and liquid bio stimulants on number of leaves, leaf width, leaf length and leaf area of broccoli

Treatments	Number of leaves			Leaf width (cm)			Leaf length (cm)			Leaf area (cm ²)		
	30 DAT	60 DAT	At harvest	30 DAT	60 DAT	At harvest	30 DAT	60 DAT	At harvest	30 DAT	60 DAT	At harvest
T ₁	10.87	18.47	18.60	15.28	25.52	25.63	18.81	34.40	34.53	185.39	661.98	665.32
T ₂	10.80	18.27	18.40	15.02	25.25	25.27	18.28	34.06	34.20	183.06	657.36	660.69
T ₃	11.67	18.53	18.67	15.41	25.76	25.79	19.67	34.98	35.10	190.25	665.84	669.17
T ₄	10.93	19.68	19.80	15.34	25.65	25.67	18.85	34.60	34.83	187.17	669.98	673.31
T ₅	11.73	19.60	19.73	15.44	25.87	25.89	19.47	35.00	35.15	188.72	675.38	678.71
T ₆	11.60	20.00	20.13	15.65	26.33	26.35	19.17	35.18	35.37	198.41	678.60	678.89
T ₇	11.47	20.27	20.40	15.56	25.60	25.66	20.01	35.30	35.45	192.75	682.92	686.24
T ₈	11.80	20.80	20.93	15.73	26.71	26.71	19.22	35.38	35.56	194.08	687.36	690.69
T ₉	11.73	20.73	20.87	15.80	26.63	26.69	19.87	35.47	35.62	200.75	691.61	694.94
T ₁₀	11.60	20.67	21.07	15.85	26.63	26.74	18.86	35.60	35.70	204.08	689.86	693.19
T ₁₁	11.67	20.93	21.00	15.88	26.72	26.84	20.01	36.03	36.17	209.06	695.39	698.72
T ₁₂	11.93	22.13	22.20	16.29	27.00	27.28	21.07	37.31	37.43	225.77	705.86	709.19
T ₁₃	12.73	22.80	22.93	17.29	28.57	28.71	21.98	38.59	38.71	228.42	735.23	738.57
T ₁₄	12.33	22.07	22.27	16.85	27.62	27.65	21.41	38.30	38.43	213.08	715.59	718.92
T ₁₅	12.27	22.27	22.40	17.21	28.19	28.62	21.61	38.13	38.33	219.90	724.73	728.06
S. Em. ±	0.46	0.64	0.64	0.48	0.63	0.63	0.62	0.87	0.86	6.57	13.50	13.40
C.D. at 5%	NS	1.86	1.85	1.40	1.84	1.80	1.80	2.52	2.50	19.05	39.09	38.82
C.V. (%)	6.81	5.44	5.38	5.27	4.13	4.05	5.41	4.20	4.15	5.65	3.39	3.35

Yield attributes

The earlier days to 50% curd initiation (49.87 days) was recorded in treatment T₁₃ (Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + *Jeevamrut* @ 3% (Drenching and Foliar spray at 30 and 60 DAP) + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT)) followed by T₁₄ (51.60 days) while earliest maturity (60.67 days) found in treatment T₁₃ (Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + *Jeevamrut* @ 3% (Drenching and Foliar spray at 30 and 60 DAP) + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT)) followed by T₁₅ (62.47 days), T₁₄ (62.20 days) and T₁₂ (63.63) while treatment T₂ (Vermicompost @ 7.5 t/ha) taken maximum (58.80 days) to 50% curd initiation and (69.47 days) curd maturity. The

earliness in integrated source of organic manure and bio-stimulants treatment may be due to soil might hence improve the physicochemical and biological properties of the growth medium. The maximum curd diameter (18.03 cm) was recorded in treatment T₁₃ (Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + *Jeevamrut* @ 3% (Drenching and Foliar spray at 30 and 60 DAP) + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT)) followed by T₁₄ and T₁₅ i.e. (17.13 mm and 17.07 mm). Maximum weight of curd (427.07 gm/plant) was recorded in treatment T₁₃ (Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + *Jeevamrut* @ 3% (Drenching and Foliar spray at 30 and 60 DAP) + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT)) followed by T₁₅, T₁₄ and T₁₂ i.e. (419.60

gm/plant, 411.73 gm/plant and 398.40 gm/plant) respectively. Maximum curd yield (13.31 t/ha) was noted in T₁₃ (Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + *Jeevamrut* @ 3% (renching and Foliar spray at 30 and 60 DAP) + *Anubhav Bio-NPK* (Drenching and Foliar spray at 30 and 60 DAT) followed by T₁₅, T₁₄, T₁₂, T₁₁, T₉ and T₈. i.e. (13.21, 13.01, 12.96, 12.45, 11.95 and 11.75 t/ha). It might be due beneficial role of added FYM, VC, *Jeevamrut* and bio-

fertilizers in improving soil physical, chemical and biological properties is well known, which in turn helped in better nutrient absorption by the plant resulted in better yield. This result is in accordance with findings of Lal *et al.* (2015) [6] in broccoli, Meena *et al.* (2017) [7] in broccoli, Rawat and Maji (2018) [10] in broccoli, Singh *et al.* (2018) [12] in broccoli, Kumar *et al.* (2019) [4] in broccoli and Tiwari *et al.* (2021) [13] in broccoli.

Treatments	Days to 50% curd initiation	Days to curd harvest	Diameter of curd (mm)	Weight of curd (g)	Yield (t/ha)
T ₁	58.07	68.73	13.83	298.73	9.93 ^{DE}
T ₂	58.80	69.47	13.17	284.07	9.33 ^E
T ₃	56.93	68.00	14.40	310.67	9.89 ^{DE}
T ₄	57.40	67.33	14.23	321.47	10.57 ^{CDE}
T ₅	57.50	67.50	15.27	330.20	10.89 ^{BCDE}
T ₆	56.33	66.00	14.87	339.73	10.56 ^{CDE}
T ₇	57.93	67.93	15.27	343.53	11.03 ^{BCDE}
T ₈	56.80	66.83	15.23	351.93	11.75 ^{ABCD}
T ₉	57.20	65.53	14.47	363.00	11.95 ^{ABCD}
T ₁₀	54.43	66.73	16.07	369.67	11.30 ^{ABCDE}
T ₁₁	56.33	65.20	15.67	372.93	12.45 ^{ABC}
T ₁₂	55.30	63.63	16.17	398.40	12.96 ^{AB}
T ₁₃	49.87	60.67	18.03	427.07	13.31 ^A
T ₁₄	51.60	62.20	17.13	411.73	13.01 ^{AB}
T ₁₅	53.00	62.47	17.07	419.60	13.21 ^A
S. Em. ±	1.04	1.58	0.41	17.66	0.62
C.D. at 5%	3.01	4.58	1.18	51.15	1.80
C.V. (%)	3.23	4.15	4.58	8.59	9.37

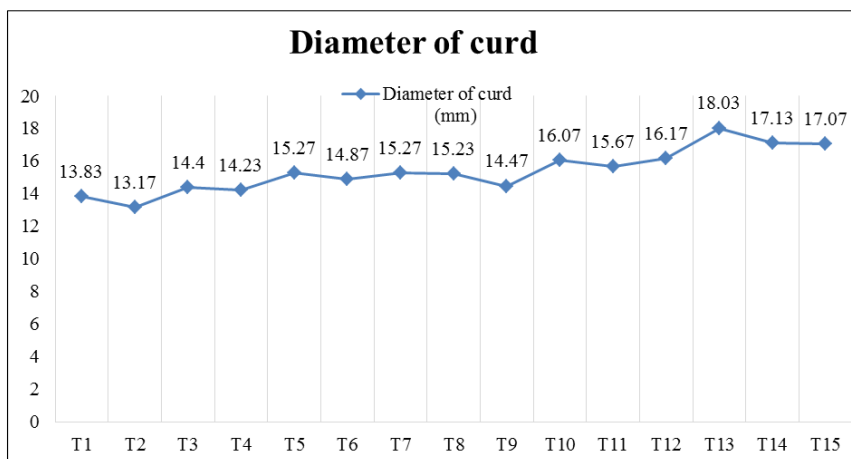


Fig 1: Effect of organic manures and biostimulants on diameter of curd)mm (of broccoli

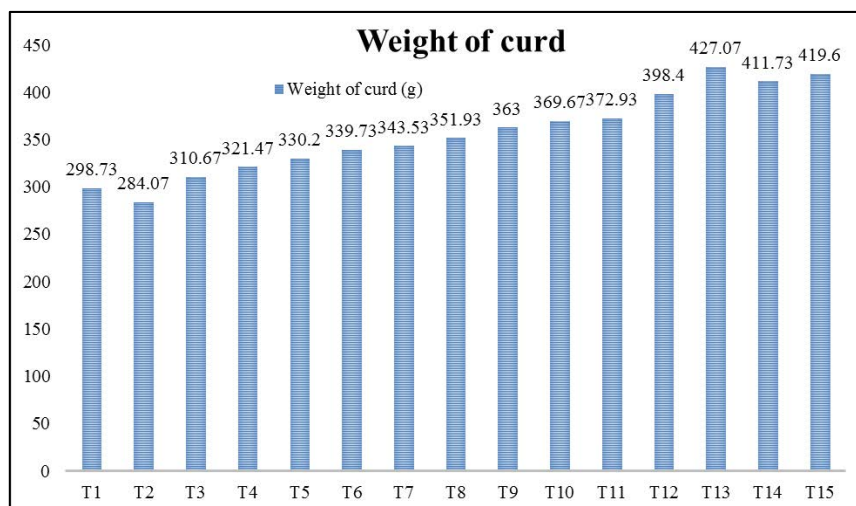


Fig 2: Effect of organic manures and biostimulants on weight of curd (g) of broccoli

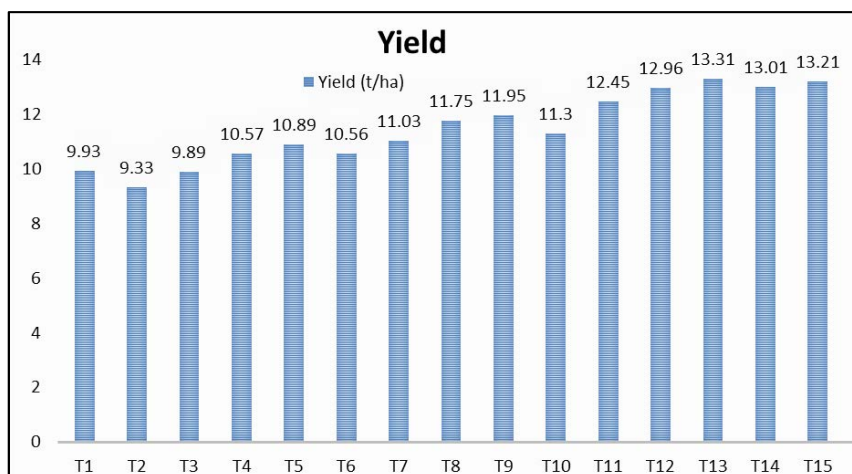


Fig 3: Effect of organic manures and biostimulants on yield (t/ha) (of broccoli)

Economics

Economics of the different treatments have been worked out. The data pertaining to cost of cultivation for different treatments have been depicted in Table 4. The results show that the treatment T₁₃ [FYM @ 15 t/ha + VC @ 3.75 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT) + Anubhav Bio-NPK (D & F at 30 and 60 DAT)] had highest net realization (Rs. 442132 per hectare). More aver highest BCR observed in treatment T₉ (Farm yard manure 20 t/ha + Anubhav Bio-NPK (Drenching and Foliar spray at 30 and 60 DAT) i.e. (7.20) due to lowest cost of inputs.

Conclusion

On the basis of results obtained from research experiment, it can be concluded that application of Farm yard manure @ 15 t/ha + Vermicompost @ 3.75 t/ha + Jeevamrut @ 3% (Drenching and Foliar spray at 30 and 60 DAT) + Anubhav Bio-NPK (Drenching and Foliar spray at 30 and 60 DAT) was found most effective treatment for increasing growth parameters and yield attribute with getting higher realization of broccoli.

Table 4: Effect of organic manures and liquid bio stimulants on days to 50% curd initiation, days to curd harvest, diameter of curd, weight of curd and yield of curd of broccoli

Treatment	Treatment details	Curd yield (t/ha)	Gross realization (Rs/ha)	Total cost of cultivation (Rs/ha)	Net realization (Rs/ha)	BCR
T ₁	FYM @ 30 t/ha	9.37	410800	72580	338220	5.66
T ₂	VC @ 7.5 t/ha	9.34	373600	88180	285420	4.24
T ₃	FYM @ 25 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT)	9.89	395600	71819	323781	5.51
T ₄	VC @ 6.25 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT)	10.57	422800	84819	337981	4.98
T ₅	FYM @ 25 t/ha + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	10.90	436000	71556	364444	6.09
T ₆	VC @ 6.25 t/ha + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	10.57	422800	84556	338244	5.00
T ₇	FYM @ 20 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT)	11.04	441600	66619	374981	6.63
T ₈	VC @ 5 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT)	11.76	470400	78059	392341	6.03
T ₉	FYM @ 20 t/ha + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	11.95	478000	66356	411644	7.20
T ₁₀	VC @ 5 t/ha + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	11.31	452400	76756	375644	5.89
T ₁₁	FYM @ 15 t/ha + VC @ 3.75 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT)	12.45	498000	86492	411508	5.76
T ₁₂	FYM @ 15 t/ha + VC @ 3.75 t/ha + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	12.96	518400	86228	432172	6.01
T ₁₃	FYM @ 15 t/ha + VC @ 3.75 t/ha + Jeevamrut @ 3% (D & F at 30 and 60 DAT) + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	13.32	532800	90668	442132	5.88
T ₁₄	FYM @ 30 t/ha + Jeevamrut @ 3% (D & Fat 30 and 60 DAT) + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	13.02	520800	81196	439604	6.41
T ₁₅	VC @ 7.5 t/ha + Jeevamrut @ 3% (D & Fat 30 and 60 DAT) + Anubhav Bio-NPK (D & F at 30 and 60 DAT)	13.22	528800	96796	432004	5.46

Note: Average selling price of broccoli is 40 Rs/kg

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