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Effects of Spiritual Blessing Energy Treatment (SBET) on the growth and yield of *Momordica charantia* (bitter gourd)

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ABSTRACT: This study evaluated the morphological and phenological growth performance and yield of bitter gourd (*Momordica charantia* L.) under spiritual blessing energy treatment (SBET, also known as the Trivedi Effect®) applied to both seeds and experimental land. The experiment was conducted during 2024-2025 on farmland in Bhandarwadi, Sindhudurg, Maharashtra, India. Seeds were divided into an untreated control group (CONBIGG) and a spiritual/biofield energy treatment (S/BET) group (BTBIGG). Soil texture was assessed manually. Morphological, phenological, and yield-related parameters were recorded by an experienced scientist. The BET group demonstrated improvements in stem length, number of branches, leaf/fruit/seed colour, as well as seediness, compared to the control. Phenological parameters, including plant vine length, number of branches, fruit length, and seed length, were significantly increased by 40.28% ($p \leq 0.01$), 52.92% ($p \leq 0.01$), 43.78% ($p \leq 0.001$), and 54.95% ($p \leq 0.001$), respectively, in the BTBIGG group compared to CONBIGG. Yield (tons per hectare) was increased by 44.39% in the BTBIGG group with respect to the CONBIGG. These results indicate that the SET/BET-Trivedi Effect® significantly enhanced morphological characteristics, growth, and yield in bitter gourd, providing valuable data for the production of stable and high-quality crops.

Keywords: *Momordica charantia,* morphology, phenology, spiritual blessing, prayer, bitter gourd, yield.

Abbreviations: NPK: nitrogen phosphorus potassium; **CAM:** complementary and alternative medicine; **BET:** biofield energy treatment; **CONBIGG:** control bitter gourd group; **BTBIGG:** biofield energy-treated bitter gourd group; **SSP:** single super phosphate; **MOP:** muriate of potash; **DAS:** days after sowing.

INTRODUCTION

Since ancient times, various plants have been utilised as both medicine and food across the world. Bitter gourd, *Momordica charantia (M. charantia*), is a valuable member of the Cucurbitaceae family. It is widely cultivated in tropical, subtropical, Middle Eastern, Central, and South American regions (Jia *et al.,* 2017). Among Cucurbitaceae plants, bitter gourd fruit possesses superior nutritional content. It contains essential vitamins (A, C, E, B) and minerals such as calcium, magnesium, potassium, and iron (Singla *et al.,* 2023). In addition to the benefits of the whole fruit, the seeds are particularly rich in protein, fat, and essential amino acids, with a balanced composition of saturated and unsaturated fatty acids, predominantly linoleic acid. Bitter gourd also contains significant levels of phenolics and flavonoids, which exhibit antioxidant activities (Ardia *et al.,* 2023). Moreover, bitter gourd

contains appreciable quantities of phenolic components, including gallic acid, chlorogenic acid, tannic acid, and tannins, all of which have pharmacological significance (Tan *et al.,* 2024). It is also rich in flavonoids, such as catechin and epicatechin, a class of bioactive compounds associated with various health benefits (Shan *et al.,* 2012).

Efforts to maximise the growth, yield, and quality of bitter gourd have prompted the evaluation of multiple strategies. These include the use of high-yielding hybrid varieties (Shivam *et al.,* 2025), and the application of biofertilizers, both of which have demonstrated improvements in bitter gourd growth (Prasad *et al.,* 2009). Additionally, cost-effective complementary and alternative medicine (CAM) approaches such as spiritual blessing/biofield energy treatment (BET) (Trivedi Effect®) have shown promising results in agricultural applications (Trivedi *et al.,* 2015a,b,c,d). Therefore, this study investigated the effects of consciousness energy/spiritual blessing/prayers on bitter gourd production.

MATERIALS AND METHODS

Study site details

The experiment was carried out on farmland in Bhandarwadi, Sindhudurg, Maharashtra, India, between February and May 2025. The site was located between 15° 37’ and 16° 40’ north latitude and 73° 19’ to 74° 13’ east longitude, at an altitude of 26 meters above sea level. The region experienced hot summers and cool winters. Temperatures can reach 40℃ in April and May, and fall to between 8℃ and 25℃ from December to February. Rainfall is unpredictable, which often leads to dry spells and low soil moisture during crop growth.

Seed details

Bitter gourd seeds (label number: 88101, lot number: NU79223240, genetic purity: 98%) of the Arjun-36 hybrid variety were obtained from Namdeo Umaji Agritech (India) Pvt. Ltd. The seeds were split into two groups. One group served as the control and was left untreated. The other group was labelled as treated and received Blessings/BET/prayers. Both groups were then planted in the chosen farmland to analyse their growth, appearance, and yield. The same cultivation methods, including irrigation, fertilisation, and pesticide use, were applied in both groups.

Plot design

This study used a Randomised Complete Block Design (RCBD) with two groups: an untreated control group (CONBIGG) and a Blessing/BET group (BTBIGG). The experimental plot was split into two equal sections, one for the control and one for the treatment. Each block had two plots, and there were three blocks in total. Plots were assigned randomly. In total, there were six plots, each measuring 2.5 meters by 1.5 meters. Plants were spaced 0.5 meters apart in both directions. There was a half-meter gap between replications and a 50-centimetre gap between plots. The whole experimental site covered 35 square meters, and each plot was 3.75 square meters. The area was cleaned before the experiment. Standard fertiliser rates (50, 100, and 50 kg NPK per hectare) were applied to each plot and mixed into the soil before planting.

Spiritual energy treatment (blessing/prayer) strategy

The control group of bitter gourd seeds and plots, called CONBIGG, did not receive any treatment. The treated group, called BTBIGG, received a spiritual blessing (biofield/prayer) energy treatment (SBET) *in-person* for about 4 minutes from Mrs Dahryn Trivedi, a spiritual biofield energy healing practitioner with more than 12 years of experience. The practitioner gave the BET by sending spiritual energy to the seeds and land without touching them. The blessing included the healer using the laying on of hands and prayers from about 1.5 feet away, at a temperature of 28 ± 2°C and relative humidity of 65 ± 5%. During this process, the healer tried to channel divine energy from the Universe to the treated seeds and land.

Soil properties

The study area contained sandy loam soil, characterised as light, well-drained, and low in fertility. Prior to the experiment, topsoil samples (30 cm deep) were collected from random locations within each plot using a five-point sampling method. The collected samples were combined, and a 1 kg subsample from each plot was air-dried, sieved through a 2-mm mesh, and stored at 4℃. Physical and chemical properties were subsequently analysed. Soil texture was determined by hand feeling. Soil pH was determined in a 1:2 soil-water mixture using a digital pH meter.

Seed plantation and management

Seeds were planted directly in the soil. For the first 10 days, the plots were kept moist by hand watering. After that, a drip irrigation system with self-compensating emitters was used, spaced 0.5 meters apart and delivering 3 litres of water per hour. Each plot in both the control and treatment groups received different amounts of nitrogen, phosphorus, and potassium fertiliser (50:100:50 kg NPK

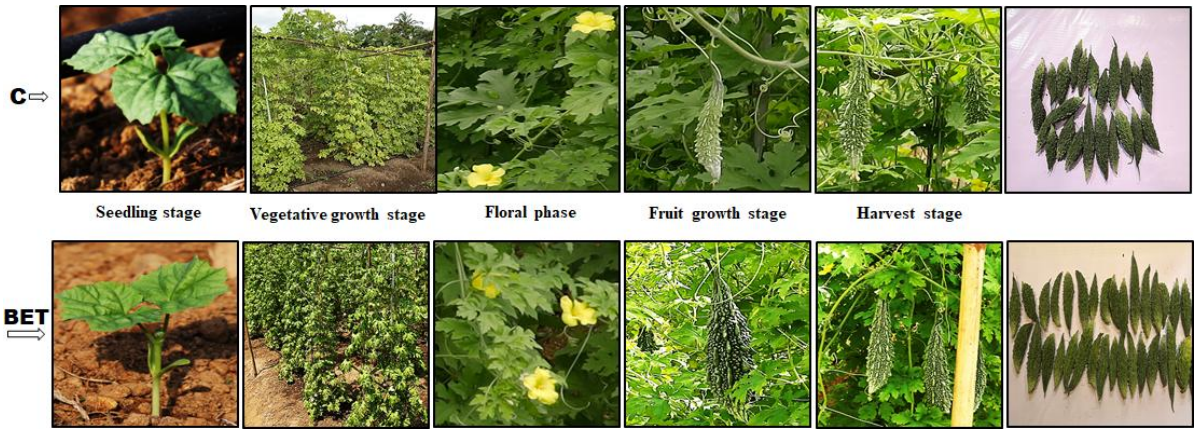

Figure 1. Sample images illustrate changes in vegetative growth characteristics of bitter gourd at different stages. C: Control group; BET: Blessing/biofield energy treatment group.

per hectare) in the form of urea, single super phosphate (SSP), and muriate of potash (MOP). All of the SSP, MOP, and half of the urea were mixed into the soil before sowing. The rest of the urea was added 21 days later. The insecticide Hamla 550 (Gharda Chemicals Limited, India) was sprayed at 2 mL per litre of water on days 21 and 49 after sowing in both groups. To measure vegetative growth and yield, five plants were randomly selected from each plot 80 days after sowing.

Morphology of bitter gourd

Several qualitative morphological traits were recorded, including main vine length, stem shape, stem length, depth of lobbing, vein colour, leaf blade colour, leaf blade width, leaf blade lobing, flower colour, flower size, flower bud colour, fruit colour, fruit shape, fruit shape apex, seed colour, seed size, and seediness colour. Quantitative traits measured included plant vine length (m), number of branches per vine, stem diameter (cm), days to 50% flowering, fruit length (cm), and fruit diameter (cm).

Crop phenology and yield traits

Bitter gourd fruits were harvested at physiological maturity. Their size was measured in centimetres, and their weight was recorded with a weighing balance. Yield per net plot, measured in kilograms, was then converted to tonnes per hectare using a multiplication factor.

Data analysis

Data are presented as mean ± SEM. Comparisons between two independent groups were performed using Student's *t*-test in SigmaPlot (v14.0). Statistical significance was defined as $p < 0.05$.

RESULTS

Analysis of soil properties

The physicochemical features of the sandy loamy soils studied. The water-holding capacity was slightly higher in the BTBIGG than in the CONBIGG. Levels of exchangeable cations like calcium, magnesium, and sodium were a bit lower in the BTBIGG. In contrast, the total chloride level was higher in the BTBIGG than in the CONBIGG (data not shown).

Morphological characteristics

Various observations on the growth and yield of bitter gourd were recorded at periodic intervals. Figure 1 shows the different stages of the growth cycle of the bitter gourd: germination and seedling, leaf growth, flowering, pod/fruit formation, and harvesting stages.

Table 1 presents the qualitative traits of bitter gourd vegetative growth. Cotyledon intensity was green in the biofield energy-treated group (BTBIGG) and medium green in the control group (CONBIGG). The BTBIGG had longer vines and stems, more primary branches, and darker green leaves than the CONBIGG. Mature fruits were dark green in the BTBIGG and medium green in the CONBIGG, with most displaying continuous ridges and a spindle shape. Seeds were brown in the BTBIGG and light brown in the CONBIGG. Seediness was classified as medium (10–20 seeds per fruit) in the BTBIGG and low (fewer than 10 seeds per fruit) in the CONBIGG. Other parameters, including stem shape, leaf blade shape and

Table 1. Effects of spiritual blessings (biofield) energy treatment (SBET) on qualitative vegetative parameters of bitter gourd at 72 days after sowing (DAS).

Vegetative trait	Control group (CONBIGG)	Treatment group (BTBIGG)
Cotyledon: intensity of green colour	Medium green	Green
Plant: main vine length	Medium (2.5-3.2 m)	Long (>3 m)
Stem shape	Angular	Angular
Stem length	Medium (5-7 cm)	Long (>8 cm)
Stem: number of primary branches	Medium (10 -14)	Many (>15)
Leaf blade shape	Cordate	Cordate
Leaf blade margin	Entire	Entire
Leaf blade colour (upper side)	Medium green	Dark green
Number of lobes in leaf blade	5 lobes	5 lobes
Flower colour	Yellow	Yellow
Colour of mature fruit (at harvesting)	Medium green	Dark green
Colour of mature fruit at ripening stage	Orange	Orange
Fruit shape (at maturity stage)	Spindle	Spindle
Fruit ridge	Continuous	Continuous
Seed colour (at the mature harvest stage)	Light brown	Brown
Seed surface	Smooth	Smooth
Seediness (number of seeds/ fruit)	Less (<10)	Medium (10-20)

Table 2. Quantitative assessment of phenology and yield traits of bitter gourd after treatment with blessing/biofield energy treatment (BET).

Quantitative Trait	Control Group (CONBIGG)	Treatment Group (BTBIGG)
Days to germination	6-8	6-7
Germination percentage (%)	83.54 ± 0.14	97.88 ± 0.22***
Plant vine length (m)	2.83 ± 0.16	3.97 ± 0.21**
Number of branches/vines	14.23 ± 1.23	22.33 ± 1.42**
Number of nodes/vines	48.24 ± 2.24	61.48 ± 2.37**
Internodal length (cm)	5.43 ± 0.14	7.11 ± 0.10***
Stem diameter (cm)	1.54 ± 0.02	2.05 ± 0.04***
Leaf length (cm)	10.14 ± 0.21	12.08 ± 0.15***
Leaf width (cm)	8.24 ± 0.11	9.95 ± 0.07***
Days to first male (staminate) flower appearance	30.34 ± 1.25	30.21 ± 1.32
Days to first female (pistillate) flower appearance	36.87 ± 1.12	36.52 ± 1.68
Days to 50% flowering	56.34 ± 1.84	52.52 ± 1.47
Number of male flowers	153.12 ± 3.54	141.31 ± 5.47
Number of female flowers	36.18 ± 2.34	45.82 ± 1.96*
Days to fruit maturity	62.34 ± 2.12	59.74 ± 2.32
Fruit weight (gm)	77.61 ± 2.24	89.37 ± 1.66**
Crop period (days)	106.37 ± 3.18	104.72 ± 2.73
Fruit length (cm)	9.64 ± 0.42	13.86 ± 0.20***
Fruit width (cm)	5.45 ± 0.52	7.10 ± 0.23*
100-seed weight (gm)	7.89 ± 0.07	10.55 ± 0.02***
Seed length (cm)	1.11 ± 0.03	1.72 ± 0.02***
Seed width (cm)	0.67 ± 0.04	0.75 ± 0.02
Seed count/fruit	15.04 ± 0.31	20.17 ± 0.35***
Number of fruits/vines	9.67 ± 0.43	14.48 ± 0.11***
Fruit yield (kg)/plant (vine)	1.34 ± 0.05	1.57 ± 0.01**
Fruit yield (kg)/plot	12.04	17.38
Fruit yield/sq. m plot (kg/sq. m)	1.07	1.54
Fruit yield/hectare (ton/ha)	10.70	15.45

Data represented as mean ± SEM (n = 5); *$p \leq 0.05$, **$p \leq 0.01$, and ***$p \leq 0.001$ *vs.* control group (CONBIGG) using Student's *t*-test.

margin, number of lobes, fruit colour, shape, ridge, and seed surface, did not exhibit any visible differences.

Phenology and yield traits

The germination rate in BTBIGG was significantly ($p \leq 0.001$) improved by 17.17% compared to CONBIGG. At harvest, vine length in BTBIGG significantly increased by 40.28% ($p \leq 0.01$) relative to CONBIGG. The number of branches and nodes per vine in BTBIGG significantly ($p \leq 0.01$) rose by 52.92% and 27.45%, respectively, compared to CONBIGG. Stem diameter and internodal length in BTBIGG increased significantly ($p \leq 0.001$) by 33.12% and 30.94%, respectively, relative to CONBIGG. Leaf length and width were significantly ($p \leq 0.001$) improved by 19.13% and 20.75%, respectively, in BTBIGG compared to CONBIGG. The number of female flowers in BTBIGG increased significantly by 26.64% ($p \leq 0.05$) compared to CONBIGG. Fruit weight, length, and width in BTBIGG significantly increased by 15.15% ($p \leq 0.01$), 43.78% ($p \leq 0.001$), and 30.28% ($p \leq 0.05$), respectively. Seed length, seed count per fruit, and 100-seed weight in BTBIGG significantly ($p \leq 0.001$) increased by 54.95%, 34.11%, and 33.71%, respectively, compared to CONBIGG. The number of fruits per vine and fruit yield per plant (kg) were significantly increased by 49.74% ($p \leq 0.001$) and 17.16%, respectively, in BTBIGG compared to CONBIGG. Fruit yield per hectare (ton) was 44.39% higher in BTBIGG compared to CONBIGG (Table 2).

DISCUSSION

The present study identified significant changes in the morphological and phenological characteristics of bitter gourd in the blessing treatment group. Among the morphological traits examined, leaf blade colour, fruit colour at harvest, seed colour, and seediness demonstrated the most pronounced variations, which are particularly valuable for distinguishing these plants from the control group. These results align with the findings of Suma *et al.* (2022) and Mallikarjuna *et al.* (2024), who reported greater reliability of leaf, fruit, and seed characteristics in differentiating bitter gourd varieties. Related research has indicated that fruit weight is the primary contributor to variation, followed by fruit yield and fruit length (Rathod *et al.,* 2021; Saeed *et al.,* 2024). Additionally, significant differences have been observed in key agronomic traits, including plant vine length, number of branches and nodes, stem diameter, leaf shape, days to flowering, fruit size and shape, date of fruit maturity, fruit weight, seed shape and count, and fruit yield between BTBIGG and CONBIGG.

The observed increase in fruit weight may result from improved nutrient absorption by the plants, potentially influenced by biofield energy transmission to soil nutrients, as well as enhanced movement of photosynthates (carbohydrates/sugars) to the fruits during development and maturation. An increase in fruit weight corresponds with higher yield per plant. These findings indicate that the spiritual blessing energy/SBET-Trivedi Effect® may optimise yield by improving fruit set, facilitating the movement of assimilates, and strengthening the sink, which leads to heavier fruits. Yield per plant is also associated with a greater number of branches and nodes. At maturity, both fruit length and weight were higher in the BTBIGG group compared to the CONBIGG group. The variation in fruit weight observed in the treated group may be attributed to differences in vegetative growth, which influence photosynthesis and, consequently, fruit weight. This effect may be due to a higher accumulation of photosynthates in the fruits, resulting in increased weight. Based on these results, the authors tentatively conclude that exposure to the BET-Trivedi Effect® enhances bitter gourd production under the environmental conditions described in this manuscript (Upadhyay et al., 2025).

Future research should prioritise comprehensive investigations, including genetic characterisation with molecular markers, to elucidate the genetic basis of these altered traits and clarify the mechanisms underlying trait modification in bitter gourd. Furthermore, the application of molecular breeding techniques may enhance desirable characteristics such as fruit size, yield, and disease resistance, thereby supporting commercial production and meeting consumer preferences.

Conclusion

The results of this study show that the spiritual blessing energy/BET-Trivedi Effect® led to clear improvements in the growth, development, and yield of bitter gourd when compared to the control group. This suggests that the BET-Trivedi Effect® may offer a cost-effective option for bitter gourd farming in the future. The findings provide useful data for producing stable, high-quality bitter gourds. More research is needed to understand why the yields are higher with this approach.

CONFLICT OF INTERESTS

The authors do not have any commercial interests in the objectivity of the research.

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