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(51) International classification :C05F0003000000, C05F0009040000, C05F0011080000, C12N0001200000, C05F0017200000 (86) International Application No :NA Filing Date :NA (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)Name of Applicant : 1)Swami Vivekananda University Address of Applicant :Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Dr. Tanmoy Sarkar Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 2)Dr. Sudip Sengupta Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 3)Dr. Suprabuddha Kundu Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 4)Dr. Parijat Bhattacharya Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 5)Dr. Ria Mukhopadhyay Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 6)Dr. Mahafuzar Rahaman Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 7)Dr. Anirneeta De Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 8)Dr. Animesh Ghosh Bag Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 9)Mr. Rakesh Das Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 10)Mr. Tanmoy Majhi Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 11)Ms. Sayani Bhowmick Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 12)Ramit Raj Halder Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. ----- 13)Abhinaba Samanta Address of Applicant :Swami Vivekananda University, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, Kolkata, West Bengal 700121, India. -----
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(57) Abstract :

The present invention relates to a method for producing iron (Fe) and zinc (Zn) enriched vermicompost to enhance soil fertility, plant nutrition, and crop productivity. The method involves preparing organic waste, including farm residues, vegetable waste, and cow dung, followed by pre-composting, earthworm inoculation, and controlled Fe-Zn enrichment. Iron and zinc sources, such as iron sulfate, zinc sulfate, or organic Fe-Zn materials, are added in gradual doses to ensure bioavailability. Microbial inoculants (*Bacillus, Pseudomonas*) solubilize Fe and Zn, improving plant uptake. Earthworm digestion and microbial activity convert organic matter into nutrient-rich compost over 45–60 days. The matured compost is cured, sieved, and tested before packaging. This eco-friendly process provides a sustainable alternative to synthetic fertilizers, promoting organic farming and waste recycling.

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