

ZINC INCREASED ROOTING BY 280% IN TRANSPLANTS¹

Jerald Wheeler, Joseph Paternoster², Kyle Peterson, Harold Jensen

Abstract: Zinc is the most common deficient micronutrient in soil. Zinc is essential to many enzyme systems in plants with three main functions including catalytic, co-catalytic, and structural integrity. Zinc contributes to the production of important growth regulators, which affect photosynthesis, new growth, and development of roots. Quick root development is key to the survival of new plants. Zinc promotes the cell growth needed for increasing root development, formation of new leaves and vigorous shoot growth. Zinc improves stress tolerance. If zinc is in short supply, plant utilization of other essential plant nutrients such as nitrogen will decrease. In the plant growth hormone, indole-3-acetic acid (IAA), is a naturally occurring auxin. It also occurs in many bacteria, fungi, and algae. To maintain plants normal growth, IAA must be produced and regulated by the plant. Zinc is the co-factor in the transformation of the amino acid tryptophan to the auxin IAA. Zinc will help maintain IAA levels in the plant and promote growth, rooting, and health. The selection of zinc sulfate as the source of zinc was based on it being the most readily available form for plants. Zinc sulfate also contains a sulfate ion. The sulfate ion (SO₄²⁻) is a beneficial nutrient and occurs naturally in soils. Sulfur is used to bind amino acids together by sulfide bridging to create enzymes and proteins, the building blocks of life. Research indicates that the presence of acetic acid will improve uptake minerals. Greenhouse tests show transplants watered with slow release water containing zinc acetate increase root mass by up to 284% in 30 days. Delivering water and the zinc acetate over 90 days enables the plant to uptake this vital micronutrient.

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²Jerald Wheeler, PH.D, Kyle Peterson, Chemist ACRE Inc. PO Box 36927 Tucson AZ 85740
Joseph Paternoster-President CEO, Harold Jensen-Research & Development DriWater, Inc.
1042 Hopper Ave, Santa Rosa CA 95403