



A CATALYST FOR IMPROVED SOIL STRUCTURE & EARTHWORM ESTABLISHMENT



On the farm and in the lab, Calcine®-treated soil has improved soil structure by reducing sodium levels, enhancing permeability and improving filtration. In fields once sealed and inhospitable to soil life, earthworms now are able to flourish. By improving soil structure with Calcine®, producers can strengthen earthworm populations and better leverage soil organic matter to improve nutrient efficiency—particularly nitrogen—and boost crop yield.

IN-FIELD FINDINGS: CALCINE® SUPPORTS EARTHWORM ESTABLISHMENT

A field study of sodic soils in Arizona clearly demonstrate earthworm establishment on Calcine®-treated fields. The study analyzed two adjacent fields in Buckeye, AZ. One field was treated with Calcine®; the other was left untreated. Only a single earthworm was located in the untreated field. In comparison, earthworms collected from the Calcine®-treated field averaged 123 worms per square meter. Findings from the ten sample areas are summarized below.

	# of Earthworms per Square Meter								AVG/Acre
Untreated Control	1	0	0	0	0	0	0	0	405
Calcine®-Treated	117	135	144	94	162	72	117	126	497,780



IN-LAB FINDINGS: EARTHWORMS PREFER CALCINE®-TREATED SOIL

Earthworm preference for soils treated with Calcine® was further validated by two in-lab studies with juvenile and mature earthworms. In the study, soil treated with water was placed in a container adjacent to soil wetted with Calcine®-treated water. Earthworms were placed in the center of the container, allowing worms to migrate freely to either the treated or untreated soil. The container was placed in a 50 degree incubator and misted once daily. After 72 hours, the soil was separated into treated and untreated containers and sieved for earthworm counts. In both cases, earthworm preference for Calcine®-treated soil was dramatic. Findings are reported below.

Earthworm Preference Study #1		
Untreated Control	7	11%
Calcine -Treated	54	84%

Earthworm Preference Study #2		
Untreated Control	21	36%
Calcine -Treated	38	64%

Soils treated with Calcine® contained three times as many worms after a three-day period

EARTHWORMS MATTER.

Earthworms are a leading indicator of soil health. A meta-analysis of 58 studies spanning 100 years showed earthworm presence significantly increased crop yield by 25% and plant biomass by 21%. As part of the larger soil ecosystem, earthworms are essential players in nutrient cycling, residue decomposition, and soil drainage and permeability. Because some agricultural practices, including heavy tillage and irrigation with salty water, can discourage earthworm establishment, it's important to limit harmful effects when possible. Treating with Calcine® helps amend sodic soils, increase earthworm population, open up sealed soils, increase soil permeability and crop productivity.



For more information visit www.calcine.us