



“Solvita shows that not only is my soil respiration really high, I have exceeded the level in local native prairie soil.”

Bruce Bacon,
certified organic farmer since 1977
Ramsey, MN

Challenge

Bruce set out with the goal to develop a sustainable high-production system that builds soil health, humification and biodiversity, increases nutrient and water retention, suppresses weeds and combats soil compaction. He established permaculture beds with trafficking limited to aisles, began adding a range of organic amendments and learned to manage the health and vitality of the beds which in turn, naturally provided for the crops grown.



Gardens produce specialty greens, herbs, nuts, mushrooms, fruits and even potted trees.

Bruce has operated “Garden Farme” since 1970 and practices permaculture with deep beds. Products include culinary herbs and specialty greens used by more than 10 area restaurants and caterers. His farm has become a magnet for events such as permaculture seminars and agroecology workshops and is the focus for a soil health committee with University of Minnesota scientists, for which more collaborators are sought.

Discovery

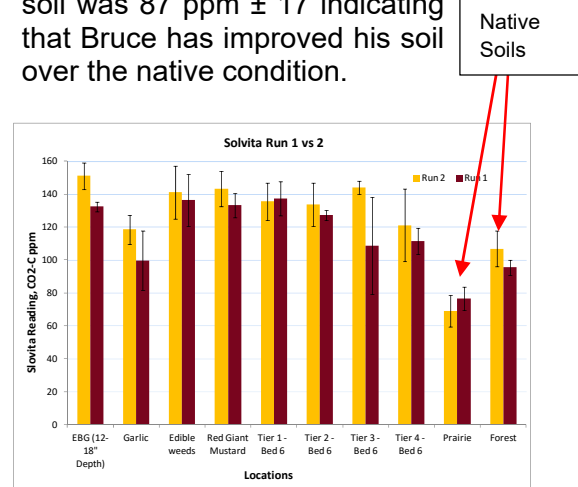
Bruce uses rotted hay bales, aged manure and composts to provide natural nutrients, suppress weeds, cool the soil and improve structure. He emphasizes soil biology over conventional chemistry and believes there is positive disease suppression arising from high soil organic matter and its microbial density and diversity.

WHY BRUCE SELECTED SOLVITA SOIL TESTING

Many scientists and growers visit his farm to learn about his unique approach to soil health and sustainable production. He was told he should try Solvita to characterize the status of his soils after 4 decades of organic management.

Results

The study showed that the raised bed soils were very healthy with organic matter averaging $5.4 \pm 1.3\%$ in contrast to native soils at $2.0 \pm 0.9\%$. Solvita CO₂ levels for beds averaged $132 \text{ ppm} \pm 18$. In contrast the native prairie/forest soil was $87 \text{ ppm} \pm 17$ indicating that Bruce has improved his soil over the native condition.



High soil life in permaculture beds vs. native prairie and forest soils