



CaL Solv gives an immediate shot in the arm of Calcium availability for plants to use at the cellular level. **CaL Solv** is a soluble powder, highly concentrated calcium supplement for soils. It contains 38% actual calcium. Calcium supplementation to soil has before been done by utilizing standard liming materials such as dolomitic lime or calcitic lime at very high rates per acre (2000 pounds per acre or more). If you think about this, it becomes apparent that this would equate to spreading about 100 pounds of lime over a typical golf green. The problems with this are obvious. In addition to the problems with the great amounts of bulk calcium material that would have to be applied with standard liming materials, there is a problem with the very slow calcium release rate of liming materials, and in turf culture, **AVAILABLE CALCIUM IS CRITICAL AT ALL TIMES**. According to research done by the University of Illinois at Champaign, one ton (2000 lbs.) of lime will give only about 5 pounds of available calcium slowly over a year. **CaL Solv** will do this on an almost immediate basis, and it will not be lost due to "tie up" on the soil colloids as other calcium forms will be.

HOW DO WE ACCOMPLISH THIS? The problem with standard calcium supplements is that the particle sizes are so large that it takes the soil microbes a long period of time to break it down to a plant available form. Manufacturing methods are not able to process calcium particles small enough. **SO HOW DID WE DO IT?** We started with the theory that if we could make a true solution of calcium, that the calcium molecules in that solution would have to be as small as could ever be accomplished with calcium. We were able to do this by making a calcium solution from calcium hydroxide. The problem then was a calcium hydroxide solution would be desiccating to plants. This was overcome by blowing carbon dioxide through this solution to create a calcium carbonate. At this point we had a really good calcium source but it was not feasible because it was not practical to ship. This problem was overcome by spray drying down to a concentrated soluble powder. The problem with "tie up" was solved by mixing the resultant soluble powder with an organic acid to "pre-react it". **CAL SOLV**, precipitated calcium plus a low molecular weight organic acid. The 2 components pre-reacted preventing tie up when it contacts the soil.

THE RESULT: soluble calcium that can be sprayed at the rate of 15 pounds per acre, which will deliver the same amount of available calcium as 2000 pounds of typical liming material. It will not tie up in the soil.