WHY INOCULATE ?

In general, the rate, type and consistency of breakdown of any type of organic waste is dependant upon the number and type of micro-organisms actively and happily at work.

Micro-organisms are capable of quickly degrading most substances. In some cases, the rate at which they work is faster than any other comparable treatment. However, smells, compaction of solids and several other tell-tale signs of system failure are also often the result of some form of overbalancing of the microbial populations. Like many other living things, the micro-organisms which live and work in a sewerage environment need:

Food,
Something to breathe,
Somewhere to live (a compatible environment) and
Company.

However, unlike other groups of organisms, in the micro-organic world, food chains are generally very important. Normally, several groups of different microorganisms need to live together in order to feed one another. Favourable microbial reactions are very much dependant on maintenance of these diverse microbial populations. If a food chain is broken, it is likely that an imbalance will result. The most easily recognized of these happens when Sulphate Reducing Bacteria (SRB) become too prevalent – resulting in large scale production of Hydrogen Sulphide. Food chains can be broken by either less food or more food suddenly being available. Or by the introduction of substances which kill some or all organisms in a given group. Similarly a change in the amount of water in the system or any other change to the factors making up an environment will have some impact on the range of organisms present.

The techniques of inoculation and microbial balancing which are employed in VRM systems allow a constant 'topping up' of microbial populations. The range of organisms contained in the various types of inoculum used are chosen to include organisms such as Brewers Yeast which provide lots of substrates (low level bug food) for other groups of microbes to live on. In addition, groups such as lactobacillus are included which provide a dampening effect on the rampant blooming of some 'negative' organisms.

VRM has patented several inoculation methods which support a consistent, diverse microbial population. This makes breakdown of even difficult organic substances (e.g. oils, greases, alcohols, paper, sugar, protein and the like) more consistent and less prone to problems. Additionally, the use of formulations (such as EM effective Micro-organisms) in VRM inoculum allows introduction of organisms responsible for changes in surface tension and conversion of sunlight to energy in the breakdown process. This aids in sedimentation and in conversion of some difficult substances.

Consistent inoculation ensures microbial populations remain relatively constant and greatly shortens the recovery time (sometimes down to minutes) from a negative impact (e.g. dumping of antibiotic or similar substances into a septic tank).