Vest-Pocket Fertilizers

By K. F. Kellerman

Don't spend time and money trying to get results from magic fertilizers. Many kinds have been advertised in recent years and, although they are not all strictly of the "vest-pocket" class, the marvelous claims and the attempt to show that they are very scientific should make it easy to recognize them as part of this general family. The idea of the "vest-pocket" fertilizer, and its nickname, developed nearly thirty years ago as a result of the experiments which were then being made for the stimulation of clovers, beans, peas and other leguminous crops through inoculating them with cultures of nodule-forming bacteria. At about this time it was found that these leguminous crops did not thrive unless the proper strain of nodule-forming bacteria was present on their roots, and it was further found that the addition of a very small bottle of culture of the right kind of bacteria to the seed before planting often made the difference between a successful crop and a complete crop failure. With these striking results on legume crops the experiments naturally were extended with other crops, and many theories were advanced of the direct relation that might exist between specific kinds of bacteria and all kinds of crops. Although numerous and striking claims have been made by experimenters since that time, in no case have there appeared any consistent records of benefit to any crops excepting legume crops. In general, however, a green committee is not interested in growing legumes. Where a new course is being prepared and cowpeas or some other legume for enriching the soil is being grown, the inoculation of these seeds with the proper culture may be advantageous, otherwise it is difficult to see any reason why cultures of nodule-forming bacteria should ever be employed on a golf course.

There may be many reasons for the failure of these bacterial fertilizers to show beneficial results. The following explanation is perhaps the one most generally adopted by soil specialists at the present time. The different groups of soil organisms are very widely distributed in both natural and cultivated soils, so that if satisfactory conditions are maintained in the soil for the growth of bacteria the proper bacteria will develop normally. On the other hand, if the soil conditions are unfavorable to the kinds of bacteria which should be plentiful in good soils, these desirable bacteria can not develop in large numbers, even if additional numbers of bacteria are added. The endorsement of a previous user of a bacterial fertilizer or other type of mysterious scientific material, ordinarily speaking, is of no real significance. In most cases untreated areas of the same kind of soil have not been observed for comparison, and in other cases the experiments have not been continued for a sufficient period to determine whether actual benefit or accidental coincidence is the real explanation of any apparent benefit that might appear. The fertilizer that is really scientific is the one which is sold under a chemical analysis and preferably also carrying a list of the sources and kinds of materials and their percentage in the mixture. Manure, compost, ammonium sulfate, and standard commercial fertilizers at the present time undoubtedly can be depended upon to return a better value for money expended than any of the stimulants, inoculants, or other materials sold under pseudo-scientific theories.