Next, you must determine its effects on the chemical's performance. Does it get to the site of the pest in the most efficient form? Is it compatible with complimentary pesticides? Is it stable in the spray mixture as well as in storage? Does it have desirable characteristics such as dispersability and flowability? Does it leave a proper deposit, produce a minimum of foam in the spray tank, have an agreeable odor, and leave a good spray pattern?

It is also desirable to know if extremes in temperature will affect the formulation, or does it separate or aggregate in storage.

Finally, is it easy to use or does it require special application equipment, as is the case of many commercial nematocides?

Chart 12

ANALYTICAL METHODS
AVERAGE $200,000

DEVELOPING ASSAY METHODS AND TECHNIQUES

1. ANALYTICAL STANDARD
2. TECHNICAL MATERIAL
3. FORMULATIONS
4. RESIDUES IN
   CROPS
   FRUITS
   ANIMALS
5. METABOLISM
   PLANTS
   ANIMALS (HANDLED IN TOXICOLOGICAL STUDIES)
6. EQUIPMENT NEEDED (ADDITIONAL COST)

Chart 12—Developing *ANALYTICAL METHODS* requires the skill of our most highly trained chemists and is one of the most costly aspects of pesticide development. If the pesticide's application is broad and laboratory studies show the presence of metabolites the total cost may be greatly increased. The purpose here is not only to identify the pesticide chemical but to establish the presence of toxic degradation products.

Metabolism studies in crops are needed to learn the chemical changes that the pesticide undergoes. With Thimet(R) phorate, our systemic insecticide, five metabolites were formed inside of plants, one of which was ten times more toxic to mammals than Thimet itself. Metabolism studies in animals is handled by the Toxicology group.

In the development of analytical methods one of the first steps is to prepare an analytical standard from which impurities have been removed.