

STRATEGIC MANAGEMENT IN THE DEVELOPMENT OF INTEGRATED PEST AND DISEASE MANAGEMENT PROGRAMS

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ABSTRACT

Scientists and business managers often use strategic thinking in a superficial way. A strategic approach to IPM acts to co-ordinate and facilitate the actions of multidisciplines to understand and achieve the overall goal of the program. Strategic implementation should be flexible to adapt to changing environmental factors which range from the immediate crop regimes to socio-economic factors. Used as a philosophy rather than a set of instructions strategic management adds value to an IPM program by giving it focus and direction.

INTRODUCTION

Strategic management provides a method of integrating pest and disease management programs in a changing environment. A strategic approach to IPM acts to co-ordinate and facilitate the actions of multidisciplines to understand and achieve the overall goal of the program. The strategic implementation should be flexible to adapt to changing environmental factors which range from the immediate crop regimes to socio-economic factors. Therefore, the program should be monitored and a method of program control or assessment should be established. However, conflicting interpretations of strategic management often result in programs that fail to fulfil the initial expectations of those supporting the work. IPM program failures can occur because of a failure to understand and agree long term goals, failure to recognize barriers to implementation, failure to implement the strategy, or because of a failure to modify aspects of the strategy

in a changing environment. IPM opportunities can be missed because of a lack of understanding of strategic management.

Conflicts often occur during the development of a strategy either in the business or scientific environment through contradictory definitions of strategic management . Organisations frequently acknowledge the necessity of “ strategic thinking “ but use the concept more as a “ comfort action “ rather than a considered implementation of co-ordinated actions, in a changing environment, designed to achieve a long term goal.

This paper is designed to challenge the generally superficial approach of some scientific and business managers to aspects of strategic management. It will develop specific points of strategic thinking and demonstrate why potentially successful IPM.

Integrated Crop Management :

Over the past decade, scientific and technical revolutions have occurred in information technology and molecular biology. The promise of these new technologies has yet to be fully realized but improved modeling, genuine expert and forecasting systems, genetically engineered crop plants and improved natural enemies will be a conspicuous feature of pest management in the twenty-first century. But the distinguishing feature of pest control for decades to come will be the integration of cultural, chemical, biological, and physical approaches to pest management, combined with genetically superior plants and animals.

Part of the address will be devoted to detailing the arsenal of pest management tools that should be available in the year 2000 and beyond, and how we might integrate these in a cost-effective, environmentally friendly and sustainable manner. However, the evidence is mounting to suggest that the overriding challenge will not be the creation of additional pest management options, but the application of those we already have, in a sound political, social and economic context. In other words, technology itself is unlikely to be the limiting or critical factor. We will need to continue to produce high quality, residue-free commodities as cheaply as possible: and the techniques we employ will need to be as effective 20 years down the

track as when first introduced. In other words, they will need to be robust and sustainable.

Research program	Target activity	Disciplines
Insect identities and behavior	Genetic variation, host specificity, attractants, pheromones	Population genetics, organic and synthetic chemistry, insect behavior , entomology
Insect/plant interactions	Pest damage, weed biocontrol agent damage	Entomology, computer science, agronomy
Modelling	Pest risk assessment, design of pest management strategies	Computer science, entomology, ecology
Field analysis and application	Problem specification, integration of pest management methods	Entomology. Ecology, agronomy
Decision analysis and implementation	Problem specification, adoption/decision making process, community involvement, evaluation	Extension, economics, sociology, policy analysis
Computer assisted learning and decision support	Decision making process and skills	Computer science, information technology, entomology
Biocontrol	Classical insect and weed biocontrol, inundative release	Entomology, ecology, weed science

It has been argued that to improve the success rate of IPM adoption we need to develop innovative strategies involving cooperative institutional arrangements and participatory processes. If we achieve genuine cooperation between scientists, advisors, farmers and other important stakeholders, the result will be better targeted research, consideration of adoption questions right from the beginning, and greater access to a wide range of required expertise beyond any one organization's capability.