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GNP, PESTICIDES, MAN AND "THE COUNTY AGENT"

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Man's quest for affluence and comfort has yielded the greatest luxury yet known. But progress as it has been tradtionally defined can no longer be pursued without foresight. In his reverence for Gross National Product, man has neglected the reality of finite resources, which can ultimately destroy not only the pleasure of profit, but man himself. But a new awareness is arising among American people. An ecological balance is being sought in remedies for the indiscriminately polluting of our water and air, the razing of our natural landscape, diminishing our limited resources and the eroding of man's opportunity to live in dignity and peace -- but our GNP grows. This new awareness has focused the public's attention on an even more lethal ecological imbalance, that of pesticide pollution in agricultural production and its residual effect on man. Two questions could be raised here about man's priorities and about his opportunity cost, namely:

(a) Suppose we did not have pesticide technology, what would the social cost to society be?

(b) What will happen to man and his environment if the present pesticide use rate is continued in the future?

The Social Cost

In recent years, pesticides have become a common tool of progressive farmers. In 1968 nearly one billion dollars worth of pesticides were used to produce and protect agricultural products (3p3175). The

effectiveness of modern pesticides in controlling agricultural pests help keep food costs down and quality up. It is estimated that if pesticides were withdrawn from farm use, crop and livestock production would drop by 25-30 percent and retail food prices would increase substantially. If weeding on the farm was still done with costly hand labor instead of with herbicides some of our favorite vegetables and fruit would be priced out of the food market. In 1968 over 50 million pounds of insecticides were purchased for home and garden use. These chemicals help make possible our modern way of life by controlling destructive and disease carrying pests. So from necessity, pesticides will continue to be the major pest control weapon in the foreseeable future, however their indiscriminate use has created special problems. They have brought great benefits but at the same time disturbing adverse side effects. To list a few: (3p3180)

(a) Some 70 species of insects in the U.S. have developed resistance to the chemicals used against them.

(b) The misuse of some pesticides have resulted in harm to beneficial insects, birds, and other widlife as well as fish.

(c) Man has manipulated his total environment on a scale that has resulted in undesirable and unexpected adverse effects upon man himself and his environment.

Are They Affecting Man

Proliferating pest problems along with sharply rising pest control costs, increasing environmental pollution and rising rates of injury and death due to pesticide poisoning, leaves little doubt in the minds of most citizens that a crisis in chemical pest control exists. The underlying cause of our present pesticide dilemma lies in the lack of ecological consideration given the synthesis experimental development, registration and utilization of newly developed synthetic pesticides and in the difficulty of making such evaluations. Today, pesticide poisoning is high among the most serious causes of fatal and non-fatal occupational diseases. The number of doctors reports involving pesticides and other agricultural chemicals have doubled since 1951, and in the state of California, have ranged from 800 to 1100 reports annually (2p3202). Over the 10 year period from 1955 to 1965 about one occupational death from pesticides have been reported for each 100 reports of occupational poisoning from these chemicals. In estimating the size of the pesticide poisoning peril, Dr. S. W. Simmon researcher (2p3199) in an article entitled "Some Health Related Needs in Poisoning Investigations", reports "there are as many as 100,000 cases of non-lethal pesticide poisonings a year, with upward to 150 to 200 fatalities. Approximately 1,000 agricultural pilots apply 10-15 percent of the nations pesticides but the price is high as one pilot is killed in an air accident for each million acres treated (2p3198). Researchers have also shown that a wide range of pesticides are found in the daily diet of the average

citizen and concluded that chlorinated organic pesticides are present at detectable levels in all foods, excluding beverages (1p385). Our knowledge of changes that are taking place in the lives of some 200 million Americans under-going life long exposure to pesticides is at best fragmentary and for the most part indirect and inferential but we do know that the concentration of DDT and its derivatives in the body tissues of man is ever increasing and that levels of Negroes are substantially higher than those of Whites at similar ages and same sex.

Part of the reason for the nations lack of knowledge about public and occupational health hazards from pesticides is pesticide poisoning is not a reportable disease in most states. Only the state of California counts farm injuries and accidents of occupational disease in the United States. Another problem is while most communities have poison information centers, most family and industrial physicians are not sufficiently equipped either by training or practice to adequately diagnose and treat pesticide poisoning. The tragedy of the whole problem of human environmental health hazards of pesticides use however, lies in the obvious fact that historically pesticide producing and distribution agencies, orientated towards maximizing the productivity increases have featured agricultural chemicals generally and pesticides specifically, without due consideration of their compatability with man and his environment. Unfortunately we have been slow to realize that plans for health and safety should be built into technological advances in the planning stage. By the time technical tools are in operation and their use,

results in undesirable and unexpected effects upon man and his environment, the best opportunity to minimize these effects effectively and humanely is largely lost.

Are There Solutions

As the decade of the 1970's began the time has come for service orientated agencies and the extension service to look beyond the business problems associated with agricultural production technology and embrace broader and more humane considerations of improving the total quality of human life. Through production technology, we have assisted the farmer and encouraged him to produce prodigeously, without full regard for either means or ends or the social cost to society. In this decade more attention must be focused on the interrelationship of organisms and their environment, and man as an organism and part of this ecological system. The rural people of this nation look primarily to the extension service--"the county agent"--for information, opinions. guidance and inputs necessary for decision making processes. Utilizing this established relationship advantageously, it seems to me that in searching for lasting solutions of the pesticide pollution problem, the county agent could begin by building his communication program around John Gardner's concept of self-renewal. It would seem that the technology which gave rise to pesticide pollution should be capable of providing new solutions which in a sense perform a function of self-renewal at the technological level. This motivation has given rise to induced technological change and a redirection of efforts toward the development of alternative

pesticide control technology. These induced technical changes have taken the form of (a) hormonal chemicals for invertebrate pest control (b) attractants and repellants (c) sterilization and other genetic techniques (d) crop breeding for resistance to pest and pathogens and (e) basic ecosystems analysis. What seems to be classic, although in the case of the present pesticide pollution crisis, as it focuses our attention on the fact that we do not have a related framework for self-renewal, a process the behavioral scientists call a social infra-structure. With an analogy for emphasis of this idea, let's look at a case in point. Last week after participating on an Earth Day Program at a local high school, several students came by after the program to discuss solutions of the problem of ecological imbalance. One student had just returned from the West Coast where they were having some difficulties with problems associated with pesticide pollution. The student had been very interested in the problem of connecting what he called "intellect", with public policy, and said he walked the streets of San Francisco and parts of the surrounding country side talking with a large number of people. He then went a step further and asked many of the individuals he met, "what they thought could be done about the problem of pesticide pollution", and he met not one, he said, that had an idea. It would seem to me then that one point of emphasis which must be underscored in searching for amelioration of pesticide pollution problem is building ways by which values which are held by the average rural or urban citizen can be in some way connected with social and political apparatus designed to apply the best possible solutions to

problems of mutual interest and benefits to all. It is only with such an alignment of values that solutions will transcend local, state and national boundaries, because purposes and needs of solution will have been well established and defined. So we can see then that amelioration of the complex problems surrounding pesticide pollution will require cooperative interest and concerted action among disciplines, agencies, people and organizations at all levels. An excellent beginning point for the building of the required infrastructure is with Junior 4H club leaders, and then with adult community leaders. The young adults have had the opportunity and have demonstrated the highly positive value of cooperative action in disseminating ideas of social importance based on mutual interest and concern. But the development of a comprehensive infrastructure at the community level will require a large human capital investment in time and skills both in identifying the problems as well as decision implementation by people after the problem and purposes have been well defined. As states and localities form an ever increasing number of multi-county agencies, it offers the advantage of involving citizens in public decisions in sufficient numbers, and with resource use in sufficient quantitative to assure economies of scale in communication projections. This will permit people from the smallest rural municipality or county to those in urban centers to become involved, and will perhaps serve as a bridge between the planning and action stage of program implementation. At the same time greater individual responsibilities for inter-community liaison can be given people at the county level as the need for problem solving becomes individually

orientated. Classical economic theory tells us that "private vice is for public benefit". The county agent is presently in a unique and meaningful position.

Today, we can see that mankind is in a dilemma as to how much further to proceed with chemical control of pests. We must ultimately make a decision. We cannot abandon our technology without regressing into an underdeveloped status, but at the same time we cannot continue our present course of technological pesticide development and use without the risk of making the earth unfit for human habitation. America must not allow pesticide poisoning to become institutionalized, thereby perpetuating the problem for generations to come. Our unbiased acceptance and adoration of production and the GNP must be re-evaluated and perhaps channeled into the development of a new life style for man; a life style that will be ecologically sound and humane. Economic motives can no longer dictate national values and goals. Improving the total quality of life for all citizens becomes then the challenge of the "Extension Service", and the "County Agent" in the decade of the 1970's.

Footnotes

1/ U. S. Department of Health, Education and Welfare, Report of Security Commission on Pesticides and Their Relation to Environmental Health, August 1969.

2/ U. S. Sub-Committee on Migratory Labor, Heavy Migrant and Seasonal Farm Workers Powerlessness, Committee on Labor and Public Welfare, U. S. Senate, Session on Pesticide and the Farm Workers, Part 3-A, September 1969, U. S. Government Printing Office, Washington, 1970.

3/ U. S. Sub-Committee on Migratory Labor, Heavy Migrant and Seasonal Farm Workers Powerlessness, Committee on Labor and Public Welfare, U. S. Senate, Session on Pesticide and the Farm Workers, Part 6-A, September 1969, U. S. Government Printing Office, Washington, 1970.

4/ Irma West, "Pesticide Induced Illness, Public Health Aspects of Diagnosis and Treatment," U. S. Sub-Committee on Migratory Labor Hearing on Pesticide and the Farm Worker, Part 6, U. S. Government Printing Office, Washington, D. C., 1970, p. 6.