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PROCEEDINGS

Linking Formal and Informal Science For Sustainable Development

Some Strategies For Transferring Plant Protection Technologies To Resource Poor Farmers

1 Putting in place of a professional high skilled extension service that must be virile, mobile, aggressive and self-motivating. It must include a regular training programme that must cut across all cadres of staff and farmers and with close linkage with research. The re-organised extension service in the state wide Agricultural Development Projects (ADP) appears to be fulfilling this role systematically and effectively.

2 The input delivery system must provide all necessary inputs to the farmers through the Farm Service Centres, farmers' co-operatives and agents.

3 Credit must be made available to farmers at the beginning of the season for the purchase of these expensive inputs and equipments.

4 More emphasis on the development of relatively cheaper methods e.g. improved disease/insect resistant seeds and integrated pest management methods.

5 Intensification of research on the use of local products for pest control e.g. neem tree.

6 Provision of rural infrastructure-like roads to link towns and villages and portable water for drinking and farm use.

The Significance Of Natural Crop Protection Practices

Traditional crop protection practices have evolved since man first cultivated the land and needed to cope with biotic and abiotic stresses. This has led to the development of Natural Crop Protection practices.

Natural crop protection refers to the use of biologically active ingredients derived from plants for the management of crops. Aware of the growing global demand for a safe environment, the industrial nations are now in search of Natural Pesticides from the rich flora of the tropics and sub-tropics. Developing countries of the tropics and subtropics should therefore seize the advantage of the rich and diverse flora for the development of Natural Pesticides.

In Nigeria for example, the diverse ecological zones from the mangrove and rain forest of the south to the Savannahs of the north, support a wide range of vegetation types rich in many flora. For example, *Azadirachta indica* (Neem) is well distributed in Nigeria. It's pesticidal ingredient is found in all parts of the tree and it is often used for the storage of maize, cowpea and rice to protect them from weevils and other pests. *Piper guinense* occurs in many parts of Nigeria and it has been successfully used in the control of *Callosobruchus maculatus* (beetles), *Zonocerus variegatus* (Grasshoppers), termites and flower thrips. (Ivbijaro 1980) *Caspicum* Pepper are also widely distributed in Nigeria and it is very important in the storage of cowpeas. (Olaifa *et al*, 1987) Vegetable oils from groundnut, castor seed and coconuts have been found to be very useful for the control of weevils and other insect pests of grains in storage. Therefore, the potentials are high for the cheap production of natural pesticides from these and other plants to forestall the importation of the expensive and toxic pesticides.

SUMMARY

The need to look at new resources of botanicals for pest control should be seriously examined. Fortunately, tropical developing countries have a rich and largely untapped abundance of natural products to improve human welfare and strengthen the economics of a developing country like ours.

A lot of studies indicated that Natural Pesticides could be an answer to the prohibitive costs of threat to environmental safety. The tasks ahead thus require further research into the active ingredients of plants and their mode of action on Pest and Pathogens. Equally important is the strengthening of the extension service into a modern professional service regularly capable of providing formers with a simple, cheap and profitable crop protection technology.

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THE POTENTIALS OF FARMERS' INDIGENOUS KNOWLEDGE FOR THE CONTROL OF PLANT DISEASES.

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PREAMBLE

For the whole world to achieve the most desired self-sufficiency in food production, plant protection technologies must continuously be developed and used in food production process to battle against prevailing insect pests and diseases, weeds, vertebrate pests and menace of birds. These technologies must reach the primary producers who must be able to use them effectively and efficiently. However, a host of technologies have been developed which are actually not being used by resource poor farmers who still produce the bulk of food in the developing countries. In Nigeria for example, Olayide *et al* (1980) reported that 98% of the food consumed is produced by small-scale farmers who cannot afford capital and input intensive crop protection approach. Strategies must therefore be developed to make sure that plant protection technologies be developed from farmers indigenous knowledge and selected modern technologies.

Some Prominent Features Of Our Current Technologies

1. High cost and scarcity of input particularly with the introduction of Structural Adjustment Programme (SAP)High cost application equipments
2. Highly sophisticated in application and regulation including questions of safety.
3. Requires a professional and virile extension service with a vigorous training component to enable farmers identify problems and use the technology effectively
4. Some of them may not fit, into the farming systems of farmers and therefore stand little chance of being adopted.

The chemical sprays require water as a medium of application or distribution.

Socio-Economic Characteristics Of Resource Poor Farmers

The socio-economic characteristics of resource poor farmers include the following

1. Farming activity is usually family oriented
2. Production is at the subsistence level with very little for sale.
3. Low capitalization
4. Low yields per hectare
5. Small size of holding
6. Farmers are usually illiterate with little or no formal education
7. Farmers are generally predisposed to diverse disease including water borne disease.
8. They are poorly-fed and usually predisposed to nutritional deficiency diseases.
9. Mature males are generally polygamous
10. Family labour is of great importance
11. Incomes are generally very low
12. In many parts of the country farmers usually engage in mixed cropping or intercropping and mostly in food crop production.
13. They live in villages that are poorly linked with cities and towns and lack adequate water supply for domestic and farm use.

Essential Characteristics Of A Technology That Can Be Applicable To Resource Poor Farmers.

1. The package or technology must be simple and easy to understand
2. The technology and its cognate inputs must be readily available and accessible
3. The price of the technology must be affordable
4. It should be socially compatible to enhance its acceptability
5. It should be technically feasible
6. It must be economically viable
7. It must be divisible to allow for trialability
8. Must be farmer's farming system oriented.