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EDUCATING THE RURAL COMMUNITY FOR THE SUCCESS OF A VECTOR CONTROL PROGRAMME

by

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ABSTRACT

Studies on community composition, leadership pattern, and communication channels in representative villages in Delhi state were undertaken in order to develop a suitable educational programme to inform the villagers about the possibilities of genetic control for mosquitos. The literacy rate, occupational pattern, village leaders and religious background were determined. Since the majority of the population was illiterate, interpersonal communication and demonstrations were found to be the most effective approach. When the village population was notified of the goals of our programme, they accepted it and gave good cooperation.

The success of any public health programme is largely dependent upon educating and adequately explaining to the specific local population as to its aims and objectives. This is especially true in any entomological control programme where the people do not understand the disease-vector relationship. Russel et al. (1963) and Dillon et al. (1969) observed that the lack of acceptance of residual spraying of DDT within houses was due to the ignorance of villagers as to the goal of the malaria eradication programme. Krishnamurthy et al. (1962) encountered similar difficulties when he released radiosterilized mosquitos in a village in an attempt to control Culex fatigans. He ultimately had to terminate his study due to the villagers' hostility.

In early 1970 the World Health Organization/Indian Council of Medical Research Unit on the Genetic Control of Mosquitos was founded in New Delhi. Its two principal objectives are (1) to determine the operational feasibility of genetic techniques for the control and eradication of Culex fatigans and (2) to obtain data on the reproductive biology and population dynamics of Aedes aegypti for the genetic control of this species. As both of these objectives involve the release of insects into the natural environment it would therefore be necessary to have the cooperation of the community for the programme to be successful.

To the laymen, the release of large numbers of mosquitos irrespective of sex or biting habits constitutes a nuisance and in order to obtain their acceptance to conduct field experiments by releasing a large number of sterile male mosquitos, a well-defined educational programme prior to and during the releases is essential. To develop a programme of this nature, investigations were conducted to determine the most suitable approach to communicate with and educate the public by obtaining information on:

(1) Community composition of villages;

(2) Leadership pattern of the village community;

(3) Communication channels available;

(4) Villagers' awareness of mosquito problems;

(5) Evaluation of villagers' response to the release of sterile males.

Community composition of villages

More than 90% of the households of selected villages in the Delhi area were contacted. At least one adult member from each household, preferably the head, was interviewed. Data was collected on composition of population in terms of age, sex, education, family size, occupation and religion. The primary objective was to assess village size in relation to its heterogeneity, level of literacy, occupational pattern, especially number of absentee workers and religious background. This type of information should be helpful to prepare educational activities and material as well as to anticipate potential problems of communication.

The average village in this study was composed of 1079 inhabitants of which 46% were adults over 18 years of age with a fairly equal distribution as to sex. Since children comprise 54% of the population, they could be a nuisance in a release programme. Of the 128 families interviewed, the average size of which was 8.4 persons, all practised Hinduism except one. Although these villages were close to New Delhi and the people well informed of national events, only 19% of the adult males and 8% of the adult females were literate. These people were wary of strangers, so their confidence had to be gained before any programme could proceed. All information about the programme, because of the low literary rate in the adult population, would have to be verbal or visual.

Leadership pattern of village community

The Panchayat Raj or village council is the basis of government at the village level. The members are elected to their post and the number varies according to population size. One of their principal tasks is to select a village leader or headman, a post which was formerly hereditary. The headman is now primarily concerned with village law and order and also acts as a link between the local government and the village community. However, he cannot make any major decisions without consulting the council. In addition to the headman and council members there are other informal leaders such as head of castes or religious leaders etc. in the village who, according to Orenstein (1960), may also play an important role in village affairs. Identification of such informal leaders and their involvement for the promotion of this programme in addition to formal leaders is essential.

Using the techniques suggested by Moreno et al. (1960) leadership pattern was therefore studied in one of the selected villages, Pochanpur. Out of the seven men of the village who satisfied Moreno's set criteria of leadership only three were elected members of the village council, namely A, B and C as shown in Fig. 1. Village headman (B) was supported by 43 families and had a direct link with another Jat leader (D) and Harijan leader (A) which constituted a major faction of the village. The second group led by another Jat leader (E) was supported by the Brahmin leader (C) and another Jat leader (F). This group had a link with the headman's group through a non-leader (G). Apart from the third small group under the leadership of a Jat (H) there were 33% independent families who did not have any affiliations with these groups. Since the Jat group was numerically the largest in this community most of the leaders were from it. The attitude of these leaders was studied and attempts were made to motivate them to act as innovators for the programme of this research unit.

Communication channels

A rural community is a conglomerate of different sub-cultural groups having their own norms, values and ideas about the acceptance of information from different sources. Each group has its own network of traditionally acceptable channels of communication. The dissemination of information through them is considered to be more effective. Since effective

communication is not only concerned with imparting the message but also results in a favourable change in behaviour of the receiver, a careful selection of communication channels is required before conveying the message to the target population. Govindachari (1967) stressed the importance of informal channels like friends, kinship groups, community leaders etc. in addition to formal channels.

Various channels of communications and their relative importance was investigated in Pochanpur village where 80% of the heads of households were interviewed. The investigation revealed that no single channel of communication was effective for all villagers, although the majority of village populations relied chiefly upon the word of the village headman. Fellow villagers such as friends, relatives, community leaders and technical personnel were also very important in disseminating information. Community leaders in different roles such as relayers of information, or decision makers either at personal, group or caste level have played a key role in bringing about behaviour change in communities. Therefore, more than one channel was required to influence villagers. Public demonstrations such as the exhibition of the non-biting habits of male mosquitos was found to have a high educational value as a means of communication with the villagers.

Villagers' awareness of mosquito problems

It is desirable when planning suitable educational material to know the present knowledge of the people about mosquito problems, diseases associated with them and their attitude towards remedial measures. A survey was therefore undertaken to assess villagers' awareness of the mosquito problem and what diseases they carried. A total of 480 adults were selected at random in six villages and interviewed with the help of a questionnaire. The pertinent findings of this survey were:

	Percentage of persons questionned
Consider mosquitos a nuisance	96.0
Take some protective measures	94.0
(a) cow-dung smoke	77.0
(b) mosquito nets	13.0
(c) others	1.0
Recognize the mosquito as a disease carrier	72.0
Are aware of difference between Culex and Anopheles	2.0
Know that only female mosquito bites	5.0
Appreciate insecticide control	93.0
Are aware of other insects	45.0

It was interesting to note that although 96% of persons interviewed considered mosquitos a nuisance only 72% realized that they were disease carriers. Of the 94% which took some type of preventive measures 77% used cow-dung smoke whereas only 13% used mosquito nets. Only a negligible number knew that there were more than one species of mosquitos or that there was a difference between Culex and Anopheles mosquitos. A very small percentage of respondents know the biting nature of female mosquitos. However, 93% of the respondents appreciated insecticidal control.

Strategy of education

An educational programme, evolved on the basis of the above-mentioned studies was carried out in Pochanpur village prior to a sterile male release. The public was informed of the sterile male technique or "family planning of mosquitos" as a method of control, its aims and objectives highlighting the advantages of this method over the insecticide control and the problems which the community would face if the mosquito population was allowed to grow. Discussions about the release programme were held with the village headman, members of the village council, informal community leaders in order to impress them favourably as to the goals of the programme. Attempts were also made to educate the entire community as to the aims and objectives of the programme by contacting each family personally and discussing the proposed programme. This two-way communication through personal contacts was extremely useful in inviting questions which were causing apprehensions in villagers' minds. They could thus remove their doubts about the release of mosquitos in the village. Great care was also taken to give a realistic evaluation of the possible success and not to exaggerate or be over-optimistic. Since the majority of the adult population in the village was illiterate, no attempt was made to use mass media in this educational campaign. At repeated intervals demonstrations of the non-biting nature of male mosquitos were carried out in the village at various spots.

Evaluation of villagers' response to the release of sterile males

The impact of educational efforts was also evaluated in the same village. The evaluation was carried out by assessing villagers' response in terms of executing various activities of the Research Unit. Results of the study in which 85% of the villagers were interviewed showed that more than 90% of them were willing to allow members of the Unit into their premises for catching mosquitos, placing box traps and ovitraps. Most of the respondents were in favour of this type of mosquito control.

Throughout the release programme, discussions were periodically held with village headmen, members of village council and representatives of various groups about the progress of the programme. Every care was taken to counteract any false rumour before it became accepted as a fact. Certain unforseen problems did however arise during the releases which required immediate attention in order to ease the strain upon certain members of community. For example, an extensive educational programme had to be undertaken in a village during one release, when a small but vehement number of villagers wanted an immediate suspension of all releases because of the increased mosquito nuisance. A survey of the area revealed that they attributed the normal increase of Anopheles during the monsoon season (only 2% knew the difference between Culex and Anopheles) to our releases of sterile males of Culex fatigans. This problem was solved by further discussions and demonstrations in this community concerning the real cause of the increased mosquito nuisance and assurances that male mosquitos are incapable of biting.

SUMMARY

Studies on community composition, leadership pattern, communication channels and villagers awareness of mosquito problems were carried out in selected villages as part of the programme of the Research Unit on Genetic Control of Mosquitos. This background information on the community is essential in obtaining the villagers acceptance and cooperation.

The villages under study were situated within 24 km of New Delhi and farming was the principal occupation. Various factions of a typical village, their leaders (formal and informal) were identified and attitude of leaders towards the programme was studied. No single channel of communication was capable of influencing all of the village community. Since the majority of the population was illiterate, inter-personal communication and demonstrations were found to be the most effective media. Although a high percentage of the population was found to be interested in control measures, only a negligible percentage

was aware of the biting nature of female mosquitos and the existence of different species of mosquitos.

On the basis of these findings a plan of communication was established and the village population was notified of our goals. This resulted in their acceptance and cooperation of the release programme. Every care was taken to counteract any rumours before damage could be done to the programme; the entire community was kept informed about the progress and setbacks of the research.

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FIG. I

INTER-RELATIONSHIP OF VARIOUS COMPONENTS OF VILLAGE COMMUNITY