Control of bird menace in sericulture

Dr. I. K. Pai

It is not enough if the sericulturist looks after his crops till the spinning stage but he should also be cautious and vigilant during spinning, which generally takes around three days to complete, because it is a common practice among many Indian farmers (where there is a lack of space to keep the mountages inside the rearing room), make use of outdoors to place the mountages during spinning stage. During this time, a number of birds such as house crow (*Corvus splendens*), house sparrow (Passer domesticus) etc., may attack the spinning worms, thus causing significant reduction in the cocoon crops. Sometimes loss may be severe.

The menace of the birds can be controlled to a large extent by mechanical, chemical and biological methods. However, no single method is fool proof. Thus, integrated control methods may be followed.

Mechanical

Scaring: Following methods can be used for scaring the birds:

a) Scare Crows: This method is being used since ages, wherein a discarded earthen pot painted like a human face, supported on wooden sticks, clothed in human dress and fixed near the mountages will scare the birds away from the mountages. Hanging of a dead crow and of a charred coconut shell from a support also keeps the crows away for a few days. The drawback of this method is that the crows will cease to be scared after a few days.

b) Drumming: It is also a popular method, wherein an empty tin is tied to a branch of a tree a long cope tied to it hangs to the ground. When the rope is pulled manually at regular intervals, the tin strikes the branch and makes a sound, which drives away the birds. Using of hand drums, whiping in the air can also be practised to scare the birds away.

c) Use of slingshot: In this method, slingshot (made of two rope strings and a piece of cloth) can be used for pelting small stones on the birds.

d) Automatic bird-scarers: They are known as bird scaring guns. Automatic acetylene gas exploders produces a loud sound which scares the birds away.

e) Use of distress calls (bio-acoustics): Distress calls are given by a bird when it is attacked or actually caught, while the alarming calls are given by the birds when they are in some danger. Such calls are recorded on a tape-recorder and played back throuh a loud speaker. These calls and 'firing' sound alternatively, is one of the most favoured method is scaring the birds.

f) Ultrasonic Sounds: These are the sounds over 20,000 cycles per second and are not audible to human ears. Though many of the birds attacking the silkworm crops are not having the perceverance to the ultrasonics, the birds like house sparrows have been reported to have hearing range nearer to this range. Hearing these ultrasonic sounds birds will fly away.

2) Reducing the bird population: By reducing the bird population, we can surely reduce the problem. The common methods are as follows:

a) Shooting: Besides killing, it also helps the farmer to scare other birds away.

b) Capturing the birds with traps and nets: Several types of nets can be used to trap the birds. The traps may be manually operated or automatic, depending on whether we want to catch them singly or in a herd.

Manually operated traps

i) The use of bird lime: It is the oldest and simplest method of traping a bird. Bird lime may be any viscous material. Such lime is applied to roosting sites of birds so that they will get stuck to it and can be easily caught.

ii) Other simple method is spreading a net around the mountages and attract the birds by keeping some bait. The claws of the birds get entangled in the net and they are trapped.

iii) Country made traps to catch common birds: In this method, a big straw basket is held up with a rope and on the other end a man will hold the rope. Later some grains are spread under the basket as bait. When birds come down and start feeding on these grains, the rope is released so that the bird is trapped beneath the basket.

The author is a lecturer in the Department of Zoology, Goa University, P.O. Bambolim, Goa-403 202.

31(9)

Automatic Traps

Among these, potter trap and modified Australian crow trap are important.

i) Potter trap: This trap has several compartments and has a sliding door. When a bird alights on the door, the door closes automatically because of the weight of the bird. Thus the bird is trapped.

ii) Modified Australian crow trap: It is 3x3x1.8 metres size with a V shaped top made of wooden frame fitted with a chicken wire mesh. In the middle of the top of the cage, there is a 0.45 metre wide ladder like structure, with each ladder rung 0.45 metre wide and 0.15 metre apart. Further 6 cm long sharp needles are hung downwards from the rungs. So, when a bird gets in it cannot come out because of the needles.

c) The use of electrical wires: The electrified wires in the form of roosting and perching sites can also be used to avoid the birds.

d) Nest destruction: This is one of the best method to bring down the population of harmful birds. The nests of crows, sparrows etc., along with eggs, young ones can be destroyed. The results will be highly rewarding if the method is adopted during breeding season.

3) Use of nets on spinning silkworms: The spinning silkworms can be protected by providing nets covering the mountages. However, the silkworms may spin on the nets leading to the formation of deformed cocoons. So, one should be careful while using the nets. It is better if the nets are spread little away from the mountages.

4) Habitat manipulation: This includes removal of roosting, nesting and feeding grounds of the birds which makes the birds to move to a place where they can have better roosting and nesting habitats.

Chemical control

The methods included in this catagory are use of chemicals such as repellants, sterilents, etc.

1. Repellents and Deterrents: These are the chemicals, which on ingestion, cause some change in the normal behaviour of the birds and consequently emit some distress and warning calls so that members of the flock will fly away. Some of the chemicals which are used are TMDT (tetra methyl thiuram disulphide), 2% lindane, anthraquinone, 5% malathion, 5% BHC, aldrin, methiocarb etc. These chemicals are kept in open space so that the birds consume these chemicals. One should be careful to see that cattle, sheep, goats, pigs etc., which are maintained by the farmers do not consume these chemicals. They are toxic to human beings also.

2. Sticky repellents: These repellents are used to see that the bird gets stuck to the material and on being stuck, the bird emits distress or warning sound to other members of the flock. A coating of a mixture of Arabic gum and milk of jackfruit can be very useful.

3. Frightening agents or dispersing baits: These chemicals when ingested by the birds, frighten them and disperse the whole flock. Eg: 4-aminopyridine, methiocarb, methoxychlor, delapon, carbaryl etc.

4. *Stupefying baits:* These chemicals are known to stupefy the birds, which can be later caught with ease. As this method is selectively usable, it is very much advantageous. The chemicals used are Avitrol-100 (4-nitropyridine N-Oxide and Avitrol-200 (4-amino-pyridine). These chemicals are very effective against the sparrows.

5. Toxic baits: These baits can be prepared by using many of the pesticides such as carbofuran, parathion, furadon, monocrotophos, etc. In this method, the baits are prepared by soaking some food articles such as bread, chapati in these chemicals and drying them in the shade. Later these are used as bait to kill the birds.

6. Fumigants: In this method, commonly available fumigant such as Aluminium phosphide in the form of tablets are placed in the nest holes and kill the birds by fumigation. Other fumigants such as chlorapicrin, anhydrous ammonia can also be used. But, these chemicals may have secondary effects on human beings.

7. Chemosterilants: These chemicals are known to reduce reproductive capacity of the birds. These are cheap and easy to use, however their effect is not immediate. The commonly used chemicals are Azacosterol, Cadmium chloride, tryethyl melamine etc.

Biological control

It is well known that every animal has its enemies. So, enemies of birds can be used to control the menace. For eg. cats can be trained to catch the sparrows. Further, there is a very little attempt on the studies related to the role of parasites and other disease causing organisms against these birds. Once these studies are conducted, birds can be controlled more effectively.

(continued from page 23)

Diapause strain of muga silkworm

strain so preserved in Kharukul could be utilised as elite stock of muga silkworm for commercial exploitation. The isolation of diapause strain will help to rejuvenate the common multivoltine strain which presently suffers due to long years of inbreeding. Without this, it may not be possible to increase the muga raw silk production in the near future.