

Syrian Woodpeckers Attack Israel Irrigation Pipes

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For reasons unknown to anyone but themselves, Syrian woodpeckers peck holes in polythene irrigation pipes. It may be fun to them but farmers are unamused.

The Syrian woodpecker (*Dendroscopus syriacus*) weighs about 80 grams and frequents areas of south-eastern Europe and the Middle East. Israel is on the southern edge of its habitat. Over the last 40 years as the areas in Israel under forest and plantation have increased, so the woodpecker has spread. Today it is found throughout Israel, south and north. In the past the woodpecker was considered beneficial to farmers because it ate pests of the buprestidae (beetle) family which damage trees. However from about 1969, reports began coming in that the woodpecker was drilling holes in polyethylene irrigation piping. In pecan plantations, whose nuts the Syrian woodpecker favours, the damage appeared everywhere. In avocado, apple, apricot, persimmon and sub-tropical fruit groves, damage occurred mostly close to the fringes of the planted area, where cypresses planted as windbreaks, provide food and nesting places for the woodpeckers.

The holes in the pipes mean that the farmer has the expense and labour of repairing the pipes or even replacing them. There is the loss of water and reduced pressure that results in inadequate irrigation of his trees. The official recommendations for guarding against this damage are: (a) to cover the pipes with a sheet of plastic or sand or plant vegetation along them; (b) trap the woodpeckers, or (c) exterminate them with



One farmer's solution: Sprinklers in an avocado plantation armored with sheet metal cones. Pipes have been buried.

poisoned pecans. None of these measures proved effective for various reasons. In some cases the pipes were blocked by the roots of the protective vegetation. The woodpeckers learned to recognise traps. New populations moved in to take the place of those who were poisoned. Two other methods, spraying the pipes with repellent and painting the pipes white, did not work either.

A research effort was started to find ways of preventing Syrian woodpecker damage without harming other birds and

at minimum expense of time and labour to the farmer.

Experimental Set-up

In four plantations, spread geographically from north to south, 3,000 sq meter plots were chosen. On these plots lengths of 144 meter long polyethylene pipe were laid for the purposes of the experiment and inspected every two weeks from November 1979 to July 1980. Data on the biology and life of the woodpecker was gathered. In all four plantations,

damage in previous years had been heavy.

At each visit new leaks were counted, repaired and plotted on a plan of the plot. On one plot a thin walled pipe, normally flat unless irrigation is actually in progress, was laid. This pipe was left flat throughout the trials. The theory was that flattened pipe would be less attractive to the woodpeckers than a firm round one. These thin walled pipes are about two-thirds the price of conventional pipes and mostly serve for vegetable irrigation. In one plantation the regular pipes were replaced by thin-walled pipes.

In a third experimental set-up, pipes were laid out in a mixed grove of pecan, peach and guava trees. It is accepted that yellow in nature is often a deterrent to attacks. Various poisonous insects are coloured yellow and some vertebrates are brightly coloured to deter attackers. After the standard black pipes were in place for two weeks, they were painted yellow with plastic paint. The exact wave-length of the colour was 5800 angstroms. Another length of 1,000 meters was painted after 10 months and a 1,000 meters were left unpainted. A further 66 meters were painted black, to check on the effects of the paint apart from the colour. Where the paint flaked off from time to time it was repainted as needed. In a fourth plantation of oranges, 1,200 meters of yellow pipe (i.e. the plastic was self-coloured during manufacture) specially made for the trials were set out.

Results

The results of the first experiment (Figure 1) show the seasonal variations of woodpecker damage. The woodpeckers were inactive during the winter months. During March/April they only drilled one hole in ten days on the average, but by August damage incidence reached 2.7 holes per day. This could be due to the growth of vegetation over the pipes following the winter rains or an indication that the Syrian woodpeckers were seeking water to drink during the hotter months. Obviously, with dripper irrigation there is little or no open water available. However this explanation is not sufficient as they are known to drill holes in pipes where open water is freely accessible.

The second trial, on the flattened pipes, was negative in that the woodpeckers attacked them as much as the other pipes. The only effect of flattening the pipes was that the woodpeckers could puncture both sides of the pipe, doubling the number of holes.

The results of the third trial are shown in Figure 2. After painting the pipes yellow, three holes appeared in the first four

weeks. Then on the next inspection, one new hole and again on the following count, another hole was found. After that until the end of the test period there was no further damage, except for one hole where the paint had flaked off. Both the pipes left unpainted and the pipe painted black showed the typical seasonal variation in woodpecker damage, as seen in Figure 1. The results of the fourth experiment, using self-coloured yellow pipes, confirmed these results. Follow-up observations on the durability of yellow pipes are continuing.

Discussion

It is clear that the yellow colour deters

woodpeckers from drilling holes in polythene irrigation pipes. This deterrent effect persists even when all the pipes are yellow, and where, therefore, they had no other pipes to attack. The deterrent effect has so far been maintained for two consecutive years.

The woodpeckers also attack telephone cables causing in one year up to \$1 million worth of damage. The telephone authority has installed lengths of yellow cables in some areas of severe woodpecker "line-tapping" to test the benefits, if any. Up to the time of writing (January 1984) the woodpeckers have stayed away from the yellow lines.

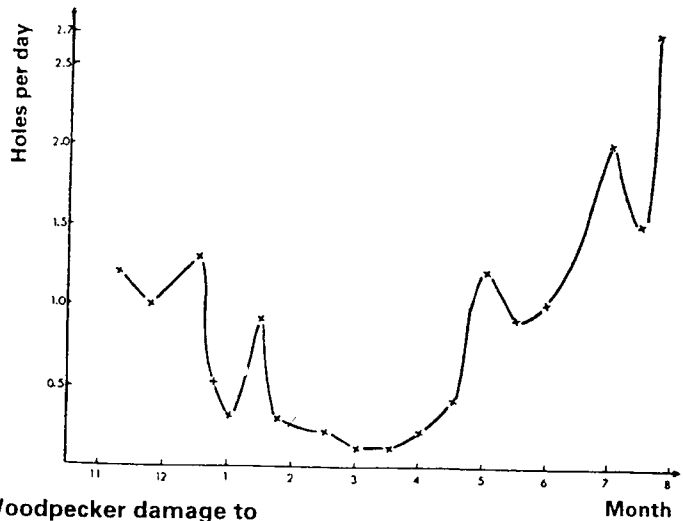


Fig. 1 Woodpecker damage to irrigation pipes in apricot orchard at Bet 1979/80

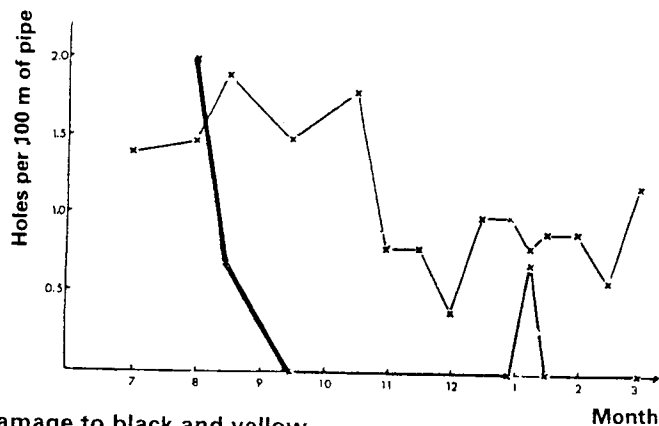


Fig. 2 Damage to black and yellow pipes

Thin line = black untreated pipe
Thick line = pipe painted yellow