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DDT As A Household Insecticide



Cooperative Extension Work in Agriculture and Home Economics
University of Nebraska College of Agriculture, and the United States
Department of Agriculture cooperating, W. H. Brokaw, Director, Lincoln.

DDT AS A HOUSEHOLD INSECTICIDE

by

Martin H. Muma, Extension Entomologist

The new insecticide, DDT, shows more promise in the control of many household pests than other known material. It is a synthetic organic compound known technically as dichloro-diphenyl-trichloroethane, but is not as highly specific in its action as other insecticides that have been produced in the laboratory. Many household insects such as flies, mosquitoes, bedbugs, cockroaches, fleas and silverfish may be effectively controlled with DDT. It is ineffective against a number of other insects, however, and is not the "cure all" that early reports seemed to indicate.

Perhaps the most outstanding feature of the new material is its lasting effect. Spray or dust residues retain their killing powers for lengths of time varying from several weeks to several months. Its killing action, however, differs widely from that of many other insecticides in that insects sprayed or dusted do not fall and die immediately after being treated. With most insects several minutes or even hours are required for DDT to take effect.

The extensive publicity that has been given DDT has naturally resulted in many inaccurate statements concerning it. Prominent among these was the early claim that DDT is not harmful to man and higher animals. Unfortunately this is not true. DDT is toxic and should not be used on surfaces where food is prepared, nor should it be stored in places accessible to children or pets. Particular care should be exercised in using it on or around cats, due to their washing habits. Also, when using oil solutions of DDT, prolonged contact of the liquid with the skin should be avoided as it may be absorbed and prove injurious. Dusts and water suspensions of DDT have not proved harmful to man and animals when sprayed or dusted on and around them and may be used with comparative safety.

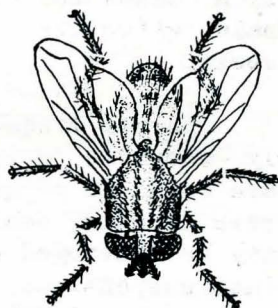
Since its release for civilian use DDT has appeared on the market in the form of dilute powders to be used as a dust, wettable powders and emulsified oils to be mixed with water for spraying, and oil solutions to be used directly as sprays. These commercial products have various trade names and, when labeled as to the quantity of DDT present in the mixture, may be recommended for control of the various insects discussed below.

DDT has also received wide publicity as one of the insecticides used in the so-called "aerosol bomb." The "bomb" was developed and used during the war as a space spray for killing flying insects in enclosed places. As such, the finely divided particles produced are quite effective for temporary relief from such insects as flies and mosquitoes. The "aerosol bomb" is not a fumigant, however, and has not been found to be very effective against crawling and hidden insects. Normal use of aerosols will not build a killing residue of DDT on wall surfaces and will not, therefore, give prolonged control.

Flies

When DDT is applied as a spray to the inside walls and ceiling of buildings, the residue or deposit remains effective for several weeks. Knock down of flies is not immediate, however, as it requires one-half to several hours for death to occur. A 2 per cent DDT suspension made by mixing a wettable DDT powder with water is recommended for use against flies in the early part of the fly season. In the late summer or early fall a 1 per cent suspension should give ample protection.

When preparing the spray, make a paste of the DDT powder with a small quantity of water before adding the rest of the water. Tests carried out in Nebraska using a 3 per cent oil emulsion of DDT have also given satisfactory fly control.

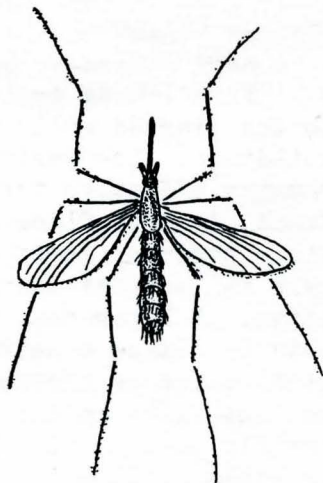


As water suspensions leave a white residue they should not be used in the home. Oil emulsions leave a very light residue and may be substituted in many places. Window and door screens may be painted with a 5 per cent oil solution of DDT with excellent results. Oil sprays are not recommended for unpainted wood or other porous surfaces since they are absorbed, leaving little or no killing residue.

Mosquitoes

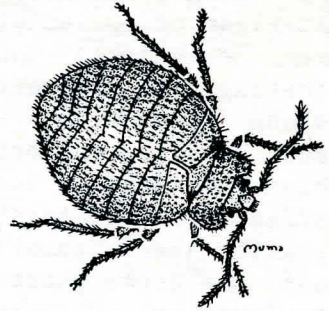
For general purposes in controlling adult mosquitoes in and around buildings, a 5 per cent kerosene solution or oil emulsion of DDT is recommended by entomologists of the U.S.D.A. Screens or walls that have been painted or sprayed with DDT should kill resting mosquitoes for a period of several weeks to three months or longer. It should be remembered, however that certain oils or emulsions will spot or stain wall paper and such sprays should be used with discretion. Water suspensions containing 3 per cent DDT may be sprayed on plant foliage to kill adult mosquitoes resting there. In such cases the DDT should remain effective for several weeks.

Larval mosquitoes, commonly known as wrigglers, that are found in stagnant water in rain barrels, small ponds, etc. may be destroyed with very dilute suspensions, emulsions or solutions of DDT. Entomologists of the U.S.D.A. have indicated that dilutions as low as one part of DDT to one million parts of water will kill mosquito larvae effectively. DDT is toxic to fish in concentrations of one part to five hundred thousand parts of water.



Bedbugs

DDT for bedbug control in the home may be used in form of a dust, an emulsion, or a solution dissolved in a light oil. A dust containing 10 per cent of DDT is fully effective. It should be dusted well into cracks and crevices of walls, baseboards and bedsteads of infested rooms and over the surfaces of mattresses. Such dusting leads to eradication of the pests within a few days, and one treatment is effective for many weeks in preventing reinfestation.

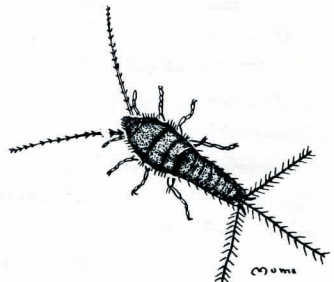


Solutions of DDT are highly effective against bedbugs. For household use a 5 per cent light oil solution is satisfactory. Mattresses or other infested materials may be sprayed with it, and it may also be sprayed on bedsteads and into baseboard cracks. One such treatment is effective for many months. Some oils may stain, so discretion should be used and an emulsion substituted where necessary.

Suspensions of DDT in water are made by mixing wettable DDT powders in water. Some prepared "wetttable" DDT powders are now on the market and need only be mixed thoroughly with water. For use against bedbugs such a suspension should contain 5 per cent of DDT. It is suitable for use in poultry houses but is not recommended for household use as it leaves a conspicuous white deposit.

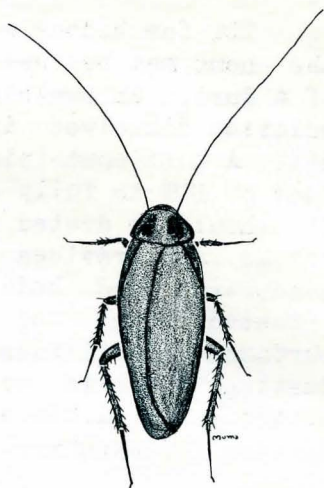
Silverfish

Immediate control of silverfish or firebrats may be obtained by applying a 5 per cent DDT dust to the infested areas. A non-staining household oil containing the same amount of DDT may be used as a substitute for the dust



Cockroaches

Larger species, such as the American or Oriental cockroach, may be quickly controlled by dusting a 10 per cent DDT powder along baseboards, into cracks and crevices and beneath or behind furniture. The immediate effect of a treatment will be to scatter the infestation throughout the house where roaches may be found clinging to the walls and furniture in a stupefied condition. In 24 to 48 hours, however, the roaches should be dead and one treatment should remain effective for several months.



The small German roach seems to be more difficult to kill with DDT than the larger species, but a single treatment will greatly reduce if not completely control an infestation. In some instances a second treatment may be necessary.

A 5 per cent oil emulsion of DDT may be substituted for the dust and if applied thoroughly should give equally good control.

Fleas

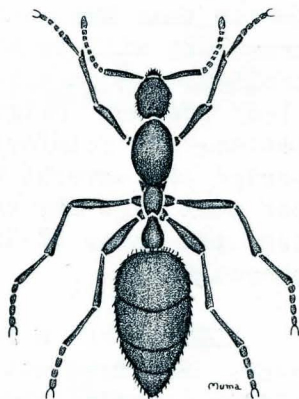
Rooms or basements infested with fleas that have dropped from dogs or cats may be effectively treated with a 3 to 5 per cent DDT dust. The dust should be applied directly to the floor and rugs and the excess dust may be removed in several hours with a vacuum sweeper. A thorough spraying with a non-staining household oil containing 3 to 5 per cent DDT may be substituted for the dust.



The flea infested dog and its bedding should be treated with a dust containing 3 to 5 per cent DDT at the same time the house is being treated. As cats have a habit of licking themselves, DDT should not be used on them.

Ants

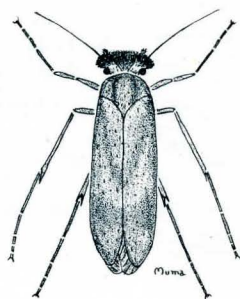
DDT is not effective against all species of ants. A number of species, however, may be killed, if not controlled, by spraying the runways and places frequented by ants with a 5% oil solution or emulsion. The treatment should remain effective for several weeks. Dusts containing 10 per cent DDT may be substituted for the sprays.



If the ant nest can be found and dusted or sprayed directly the treatment will be much more effective.

Clothes Moths

Closets, wardrobes and trunks may be treated with a 5 per cent oil solution or emulsion of DDT. Such a treatment "moth proofs" the enclosure for a period of several weeks. Three or four applications during the season will be necessary.



Clothing and other fabrics may be sprayed directly with a 5 per cent oil solution and the insects feeding on the surfaces of the goods will be killed. Only a light application should be made as a soaking spray may cause oil damage to the cloth. Expensive furs and woollens should not be treated due to the danger of oil spotting.

Carpet Beetles

The adult beetles are not easily affected with treatments of DDT. Rugs, overstuffed furniture and cushions may be carefully sprayed with a 5 per cent oil solution of DDT and the larvae that are contacted by the treatment will be killed and controlled. Such a treatment will also prevent original infestation or reinfestation for a period of several weeks. A 10 per cent dust may be substituted for the spray if it is applied thoroughly.

DDT is not a fumigant, however, and does not penetrate to hidden infestations in cushions or overstuffed furniture.

