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THE USE OF DDT FOR THE CONTROL OF CERTAIN HOUSEHOLD PESTS
by
Don C. Mote

~~DISCARD~~

AGRICULTURAL EXPERIMENT STATION
Oregon State College
Wm. A. Schoenfeld, Director
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This circular of information has been prepared in response to numerous inquiries relating to the use of DDT for the control of certain pests that may invade the household, hotels, mess halls, lumber camps and certain pests affecting man and his pets.

The form of DDT most satisfactory for household use is a 5% solution in highly refined deodorized white kerosene. In the use of this spray, advantage 5% Solution is taken of the residual activity of DDT. The air should not be filled of DDT Most with the spray mist. The DDT solution is sprayed directly onto the Satisfactory walls, screens or surfaces over which the flies, mosquitoes or other insects crawl. It is not necessary to keep the room closed during or after the spray is applied. Care should be exercised to obtain an oil solution that will not stain the walls or fabrics.

The ordinary household sprayer may be used. The most desirable sprayer, however, is one that produces fairly coarse spray droplets rather than Coarse Spray fine droplets which form a mist. An electric power sprayer or a Droplets More paint sprayer may be used if there are adjustable controls so that Desirable the liquid flow can be increased and the air flow can be decreased to form a rather coarse droplet spray.

A DDT dust has also proved of value in the control of certain pests. A powder containing 10% DDT appears to be the most satisfactory dilution for 10% DDT Powder use about the house. It is applied with a small hand duster of the Also of Value bellows, bulb or plunger type. A coarse salt shaker is useful in distributing small quantities of dusts. A thin film of dust is applied to the surfaces over which the insects walk. The nozzle of the duster may be used to advantage to blow the powder into the cracks or crevices or other hiding places. The dust will not adhere to vertical surfaces very well and the white residue may be objectionable.

Paints Being Calcimine paints and oil-base paints containing DDT are being pro-
Produced duced. Their use in fly and other household pest control is yet to be determined.

DDT, although a toxic material, is less toxic than most other insecticides such as lead arsenate, calcium arsenate, Paris green, sodium fluoride, Precautions sodium fluosilicate and cryolite. It therefore can be used with Must Be Taken as much safety as other insecticides in the forms and methods In Using DDT recommended if normal precautions are exercised.

Breathing of excessive amounts of mist from the 5% solution in oil should be avoided. Breathing of any considerable amount of oil vapor or mist alone should also be avoided. If the recommended coarse spray is used, there will be a minimum of undesirable fine mist in the air. During the course of an ordinary home treatment with the proper type of sprayer there will be little risk, especially if there is adequate ventilation. If extensive spraying is to be done under poorly ventilated conditions, it will be advisable to wear a mask or respirator to avoid irritation which might be caused by breathing kerosene or large amounts of DDT. A simple and effective mask for home use may be fashioned from several thicknesses of gauze.

Excessive or repeated exposure of the skin to an oil solution of DDT should be avoided. The oil solution should be washed from the skin with soap and warm water. Contact exposure to DDT dust or the dry residue after the base oil has evaporated is not dangerous. The original spray mist settles out of the air in a few minutes, and after that there is no danger from being in a closed room which has been treated with DDT.

As with all oil sprays, the spray mist of the DDT solution should not be exposed to open flames or heated surfaces. The fire hazard from the use of the oil solution of DDT will be practically the same as that involved in the use of the usual household fly spray.

Contamination of drinking water and foodstuffs should be avoided. (See Station Circular of Information No. 381, DDT Products and Precautions In Their Use)

DDT Is Recommendations for the use of DDT in controlling specific insect
Recommended pests follow.
For Many Pests

Bedbugs

5% Solution - DDT has proved to be remarkably effective for the control of bedbugs. A 5% solution in deodorized kerosene is the most satisfactory insecticidal preparation to use. The DDT solution is sprayed directly onto the surface to be treated. Both surfaces of the mattress are sprayed lightly. It is not necessary to saturate the fabric cover of the mattress. The frame of the bed is also covered with a thin film of spray. The liquid should not be applied so heavily that it stands up in droplets or begins to run off and drip. As little as 3 fluid ounces of a 5% DDT solution will usually be enough to treat a double bed and mattress. At this rate a pint will treat five beds. The beds do not have to be dismantled or removed from the room to be treated.

Bedbugs may be hiding about the room, behind baseboards, window and door frames, pictures on the wall, or in other secluded places. Although it may not be necessary to spray the entire room, the infested areas should be treated.

If there are infestations in chairs or overstuffed furniture, they should be sprayed, because insects in these places will have opportunity to feed without going to a bed. The greatest attention should be paid to the underside, any spaces between the frame and the edge of the upholstery where it is tacked in place, and other spots where the insects are hiding.

Sometimes bedbugs may be found infesting chairs and desks in offices, furniture in rest rooms or waiting rooms, or seats in theatres or auditoriums in frequent use. Spraying the various hiding places about seats, furniture, or other infested objects will give satisfactory control.

DDT Dust - A 10% powder is also of value in combating bedbugs. It is best applied by means of a small hand duster covering the mattress, springs and bed frame and other places aforementioned. The dust will not adhere to vertical surfaces very well and the white residue may be objectionable. One and one-half ounces will be enough to treat a double bed.

Fleas

Dog fleas, cat fleas, rat fleas, chicken fleas or hog fleas, whether they are in or under the house, in the barn, out in the yard, or on the backs of animals, may be controlled with DDT.

About one tablespoonful of 10% DDT powder dusted thoroughly in the hair along the back of the dog, from the back of his head to his tail, will usually rid him of his fleas. He may act more uncomfortable than ever for several hours. A smaller amount is applied to the head and back of cats. Since cats lick themselves, care should be exercised in applying the dust to them.

Fleas usually lay their eggs while on the animals. The eggs are shaken off or fall to the floor or ground before they hatch. The young worms which emerge from the eggs spend about 15 days in the debris on the basement floor or the ground completing their growth. At that time, they are particularly vulnerable to DDT sprays or dusts. Apply the DDT powder or spray to the floors along the baseboards or to the basement floor or underneath the house or to the ground outdoors or in the barns.

For general use in and about farm buildings, a wettable powder DDT is recommended. Five pounds of a 50% wettable powder in 100 gallons of water or one ounce to a gallon of water is recommended. The water suspension is applied by means of a compressed air sprayer, a knapsack sprayer or a power sprayer.

Flies in Houses, Barns and Outbuildings

Advantage is taken of the effectiveness of the residue left by a spray containing DDT in the control of flies. On ceilings and walls of homes where flies rest, a deposit of DDT remains effective for several weeks or more. A 5% deodorized kerosene solution may be applied as a spray to any surfaces where flies are observed to rest, such as walls, doors, screens, ceilings, cross beams, and lamp cords. In barns and outbuildings where a whitish residue is not objectionable a DDT suspension made of wettable DDT powder and water may be used. Flies enter open doors and windows and rest on walls and screens especially at night. When these places have received a residual treatment of DDT, the flies die in one to three hours.

In preparing the water-dispersible spray, make a paste of the wettable DDT powder and water and then add sufficient water to give the desired concentration. Two to four ounces (4 to 8 tablespoonfuls) of 50% water-dispersible DDT in three gallons of water. (See Station Circular of Information No. 382, Suggestions for Barn and Cattle Spraying for Fly Control)

Mosquitoes in Houses and Outbuildings

A 5% solution may be sprayed on the walls, ceilings and screens in the same manner as against flies. Mosquitoes landing on treated surfaces will die in a relatively short time thereafter.

Cockroaches

A 10% DDT powder dusted lightly about their hiding places or a 5% deodorized kerosene spray applied to the underside of table tops, pantry shelves, drawers, refrigerators and other places frequented by cockroaches is of value. The household should not be discouraged if the roaches do not disappear in a few days as one week elapses before there is a marked reduction in the number of roaches present.

Clothes Moths and Carpet Beetles

There is not enough information available as yet to guide one in the use of DDT for the control of these insects. A 5% DDT deodorized kerosene solution applied to the walls of closets and other places frequented by these insects may be of value in killing the adults and thus in time destroy enough of the emerging moths or beetles to check the infestation. The liquid should also be applied to obscure breeding places such as in the piano and radio, cold air ducts, carpet sweepers, cracks around the baseboards, and similar places where lint accumulates and offers a hidden breeding place.

Silverfish

Studies indicate that local infestations of silverfish may be controlled by application of a 10% DDT powder or a 5% DDT deodorized kerosene spray to any surfaces over which silverfish are observed to crawl.

Brown Dog Ticks

This species of tick occasionally occurs in houses in large numbers. It attaches only to dogs and carries no disease - at least to humans. A 10% DDT dust or a 5% DDT deodorized kerosene spray will control the brown dog tick when applied to walls, cracks and crevices about the baseboards, lower side of rugs and in other places where this tick hides. Ticks filled with blood will remain in their hiding places and are not easily killed by the treatments. When they shed their skins and the eggs hatch and the ticks are ready for a meal of blood, they are very susceptible to DDT and will be killed by crossing a treated baseboard or rug. The dust kills the ticks slowly, hence it should not be cleaned from fabrics, floors and other surfaces for about two weeks. After that time the powder may be taken up with a vacuum cleaner and a second treatment made later if necessary.

This powder may be dusted on dogs, using about $\frac{1}{4}$ teaspoonful over the entire body of an average sized dog. Oil sprays should not be used on animals.

Ants

A 5% DDT kerosene spray applied to the surfaces over which the ants are crawling, i. e., beneath baseboards, behind window sills and frames, about sinks in the kitchen and bathroom, to all table legs and chair legs, to both sides of pantry shelves and to any cracks and crevices leading to outside the house will control them for several weeks. Several householders who have used this method of treatment report permanent control for the season.

Wasps, Yellow-Jackets, Hornets

A 10% DDT powder or a 5% DDT kerosene spray has proved of value in destroying or preventing the nesting of these insects near dwellings. The powder is dusted into the entrance hole of the nest by means of a hand dust gun, or if the spray is used it is directed toward and into the entrance hole. A yellow-jackets' nest near the entrance to the writer's garage treated by the latter method was soon abandoned and caused no further annoyance.

Lice

DDT controls all species of human-infesting lice, but a knowledge of the different species of lice is essential for effective use of DDT.

Body lice are controlled by sifting 10% DDT powder over the inner surface of the underwear, taking special care to rub it into the seams. The inside of shirts, sweaters, trousers, hats and other articles of clothing are treated at the same time. About two heaping tablespoonfuls of the powder per treatment will remain effective for periods of three weeks or longer if the clothing is not washed. Clothing treated in this way will kill lice even after being washed once in warm soapy water.

Head lice may be controlled by rubbing thoroughly into the hair a 10% DDT dust. Since DDT does not kill the eggs, a second application is made 8 to 10 days later.

Crab lice infestations are controlled easily by dusting the affected parts lightly with a 10% DDT dust. The public regions and arm pits are most commonly infested. The entire body of a very hairy person should be dusted. A second application is made 8 to 10 days later to kill any young lice that may have hatched during this time.