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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SPORT FISHERIES AND WILDLIFE
Branch of Fish Hatcheries

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CRAWFISH CONTROL METHODS

There are about a hundred species of crawfish (known also as crayfish, crawdad, craw, and crab) in North America. The distribution of these animals depends upon numerous factors such as water conditions, soil and land conditions, geology, climate, and the suitability of habitat. In some cases several species are found in one locality. These may include nonburrowing forms and two forms of burrowing crawfish. The latter comprise dry-land forms and those that inhabit swamps and streams.

Burrowing species of crawfish may cause serious damage to dams of farm ponds, fish-hatchery dikes and pond bottoms, irrigation ditches, lily pools, ornamental pools, and similar installations. Serious losses of water may occur when burrowing weakens dams or embankments, or this burrowing may cause dams or embankments to be washed out. Lawns, gardens, and agricultural crops are also frequently damaged by crawfish.

Since it is impractical to fumigate individual burrows where crawfish infest extensive areas, control measures have been developed which use poisoned baits. During recent years experiments have been conducted with DDT, benzene hexachloride, chlorinated camphene, and other new chemicals in broadcast applications in baits.

CONTROL BY MEANS OF BAIT

The following methods of controlling crawfish by using DDT has been particularly successful in the southeastern section of the United States.

Bait to treat 1 acre:

1. Mix 4 pounds of 50% DDT wettable powder in $1\frac{1}{2}$ to 2 gallons of water. Apply to $1\frac{1}{2}$ bushels cottonseed, cottonseed hulls, ground corncobs, or dried silage, and broadcast. Bran or some similar feed product may be substituted as a carrying agent for the DDT.
2. Use 1 to 2 pounds of DDT in an emulsion concentrate ($\frac{1}{2}$ to 1 gallon of a 25% DDT emulsion concentrate) diluted with water to make $1\frac{1}{2}$ gallons of emulsion, on $1\frac{1}{2}$ bushel of the carrying agent such as cottonseed or ground corncobs.

Cottonseed and ground corncobs are the easiest to handle, both in mixing the bait and in distributing it. (Do not use cottonseed as the carrying agent on land to be planted to cotton when the seed is to be saved for planting purposes.)

Baits should be applied just after rains if possible, and are most effective in the spring. However, baits can be utilized effectively at any time when conditions are favorable for crawfish activity.

The use of DDT when sprayed on a carrying agent and distributed on infested land has reduced the number of active burrows 85 to 90 percent under favorable conditions.

CONTROL BY FUMIGATING BURROWS

This may be done at any time of the year that the crawfish appear active. Best results are secured during September when all adults are in their burrows. Various methods of treating burrows are as follows:

1. Dissolve 1 pound chloride of lime in 3 gallons of water. Application can be made with compressed-air sprayers or a watering can with the sprayer removed leaving only the bare nozzle. 1 to 2 ounces of this liquid should be applied into each crawfish burrow and the opening of the burrow closed by pressing the earth together with the foot. The chloride of lime will kill the crawfish within a few hours.
2. Combine coal tar creosote dip at the rate of 1 part to 100 parts of water. Apply 1 ounce to each crawfish burrow when the soil is wet and the water within 18 inches of the surface. Apply 2 ounces per burrow when soil is dry and water below 18 inches from the surface.
3. Mix 2 quarts of turpentine and $\frac{1}{4}$ pound of soap powder with 1 quart of water. Use 1 part of this stock solution to 50 parts of water and apply in the same manner as creosote dip.
4. Sodium hydroxide at the rate of approximately 2 or 3 pellets (or $\frac{1}{2}$ teaspoonful) per burrow provides effective control of crawfish. This method is used by H. S. Swingle, Fish Culturist, Alabama Polytechnic Institute, Auburn, Ala., and apparently it is effective in the control of these pests in narrow dams.
5. Drop 10 drops of carbon bisulphide into each crawfish burrow and close the opening by pressing together the earth at the burrow entrance. The vaporized carbon bisulphide will quickly kill the crawfish. It must be remembered that carbon bisulphide vapor mixed with air is highly explosive and caution must be exercised to avoid any possibility of igniting it.

The treatment of burrows, although very effective, is not widely used because of the labor involved. This method is practical in gardens, yards, and pond dams and in limited areas around ponds, lakes, and fish hatcheries.

To be effective, applications of poison must reach the water in the burrows. Where burrows in dikes or dams are open at the bottom into the pond or stream, it is possible for the inhabitants of the burrow to escape or they may be out of the burrow when the treatment is applied. In such cases additional treatments may be necessary.

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REFERENCES

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Interior--Duplicating Section, Washington 25, D. C. 67086