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Mosquito Control in and Around Homes and Farmsteads

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MOSQUITO CONTROL
in and around homes and farmsteads
Mosquito control is necessary because of health, recreational, and economic reasons. This insect has plagued man for centuries, causing irritation and spreading disease among both man and animals. Encephalitis is one of the diseases mosquitoes spread. Annoyance by mosquitoes causes livestock to lose weight and reduces milk production. Although other types occur in South Dakota, the most abundant species are *Aedes vexans* and *Culex tarsalis*.

**LIFE CYCLE AND BREEDING HABITS**

Mosquitoes breed during the spring and summer months in the Northern plains. The primary prerequisite for their reproduction is water. This insect passes through four stages, three of which are in water: (1) the egg; (2) the larvae or wiggletail; (3) the pupa or tumbler; (4) the winged adult.

Female mosquitoes lay their eggs either on water, at the edge of water or, in other cases, on dry soil which has previously been flooded. The larvae which emerge from the eggs are strictly aquatic and cannot exist out of water. This stage usually lasts 10 days to 2 weeks depending on the temperature. The pupa or tumbler stage usually lasts about 3 days depending on existing temperatures. Length of the adult stage is variable, with some species hibernating through the winter. Life span of the adult is usually 4 to 6 weeks. Only female mosquitoes bite and take a blood meal. Male mosquitoes do not have mouthparts suited to piercing, hence they are not blood suckers. They feed on nectar and plant juices.

**CONTROL — ELIMINATION OF BREEDING SITES**

The first and most important control efforts should be directed toward elimination of potential breeding sites. Mosquito eggs cannot hatch nor can the larvae develop unless standing water is present. Where possible and practical:

- Remove all unnecessary, temporary water containers.
- Flatten or dispose of tin cans, glass jars, or other containers.
- Burn or remove old tires that may collect water.
- Place tight covers over cisterns, cesspools, septic tanks, fire barrels, rain barrels, and tubs where water is stored.
- Eliminate tree holes by filling with concrete.
- Empty and wash bird baths weekly.
- Check rain gutters for standing water.
- Remove water from flat roofs after rainfall.
- Drain or fill-in stagnant pools and swampy places. If pools or lagoons cannot be drained or filled, apply a suitable chemical treatment for mosquito larval control.

- Examine flower pots or planters around the premises for accumulated standing water where mosquitoes might breed.
- Check fish bowls and aquariums periodically for mosquito larvae.
- Check around animal watering troughs on the farmsteads for standing water.

**OUTDOOR CONTROL OF ADULT MOSQUITOES**

In addition to the elimination of breeding sites, adult mosquito control may also be necessary to keep mosquito populations below irritating levels. Even though all breeding sites are eliminated in an area, some adults will migrate in from adjacent areas. Where adult control is desired around the home, keep all weeds and grass cut and apply a residual spray.

**Residual Sprays Recommended for Adult Mosquito Control Outside Homes**

<table>
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<tr>
<th>Insecticide</th>
<th>Formulation</th>
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<tr>
<td>Malathion (Premium Grade)</td>
<td>2% spray — dilute 50-57% emulsifiable concentrate 1 part to 28 parts of water or 4% dust — apply to gardens, lawns, flower beds, and shrubs</td>
</tr>
<tr>
<td>Carbaryl (Sevin)</td>
<td>1 lb. actual (1.25 lbs. 80%) wettable powder in 100 gallons water or 2 tablespoons of 80% wettable powder in 1 gallon of water</td>
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Thoroughly spray to the point of run-off lower limbs of shade trees, shrubbery, flower beds, grass, and shaded areas around buildings where mosquitoes congregate. For best results spray in the evening when mosquitoes are active, usually from 15 minutes before sunset to 1½ hours after sunset. Repeat application every 7-14 days as needed.

Note: Sevin insecticide sprays may injure Boston ivy and should not be used on this ornamental plant. Follow all label directions when using these insecticides.

For control around farmsteads, parks, golf courses, and picnic grounds, aerial sprays of ULV* Malathion at 6 to 8 ounces or ULV Naled (Dibrom) at 1 ounce actual per acre or Sevin applied by air at three-fourth pound active per acre as a conventional spray are very effective. Apply directly over the farmstead and adjacent land to cover a 25- to 40-acre area.

Dairy cattle cannot be sprayed directly with Malathion or Sevin and should be confined to the barn during the actual spray operation. They may be turned out on the treated areas immediately after spraying.

*Ultra low volume.
Caution: ULV Malathion and Sevin may spot the finish of some cars. Remove them from spray area or place in garage during the spraying operation. Wash accidentally exposed automobiles immediately with water plus detergents.

CONTROLLING MOSQUITOESindoors
Mosquitoes in the home can be killed using any good household spray that is sold for controlling flying insects indoors. Aerosol bombs containing Malathion, Methoxychlor, DDVP (Vapona), or Synergized Pyrethrins are all effective. Use these materials as directed on the label.

Another device which is very effective for use in homes, barns, poultry units, and other areas where mosquitoes are a problem is the DDVP (Vapona) slow release resin strip. Used as directed on the label, hanging one standard sized strip for each 1000 cubic feet of space. Observe all label precautions and use only according to label instructions.

REPELLANTS
For outdoor activity, repellants are probably the best protection against mosquito bites. Repellants will afford protection from 1 to 5 hours, depending on the amount of perspiration, skin rubbing, temperature, and abundance of mosquitoes. It is necessary to cover the skin areas to be protected evenly with repellant materials as mosquitoes are quick to find untreated areas. Some repellants sold for direct application to humans are Deet (diethyltoluamide), ethyl hexanediol, dimethyl phthalate, and dimethyl carbonate. These materials may be purchased alone or in various mixtures. Applications can be made to clothing as well as exposed skin areas. However, they should not be used around the eyes, nose, or lips. Follow all label directions in their use.

Use of a trade name does not imply endorsement of one product over another.

FOLLOW ALL LABEL PRECAUTIONS WHEN USING INSECTICIDES. DO NOT APPLY INSECTICIDES OVER OR NEAR STREAMS OR PONDS WHERE FISH OR OTHER WILDLIFE MIGHT BE ENDANGERED.