

## STORED GRAIN INSECT CONTROL

| Type Treatment   | Insect                   | Insecticide  | Rate  | Application/Comments   |   |
|--|--------------------------|--|---|--|---|
| <b>Preventive treatments for bins</b><br>(empty bins, walls, ceilings, beams, outside storage, foundations and grain-handling equipment) | <b>Beetles and Moths</b> | Centynal 0.42  | (Rate/1,000 sq ft)<br>0.25-1.5 oz/ gal water  | Clean bins before application. Storcide II may be applied using automated spray equipment. DO NOT enter bin until spray has dried. Use malathion for wooden or metal bins. Malathion will not control Indian meal moth. <b>Malathion is NOT labeled for rice storage facilities. DO NOT APPLY DIRECTLY TO GRAIN.</b> |   |
|  |                          | Malathion 5 EC   | 5.12 oz/gal water   |  |   |
|  |                          | Storcide II  | 1.8 oz/gal water  |  |   |
|  |                          | Suspend 0.42 SC  | 0.25-1.5 oz/ gal water  |  |   |
| <b>Preventive treatment sprays for grain</b>   | <b>Beetles and Moths</b> | Actellic 5 E   | 9.2-12.3 oz/30 tons grain<br>(1,071 bushels)  | Shelled corn and grain sorghum only  |   |
|  |                          | Centynal 0.42 SC                                       | (Rate/1,000 bushels)<br>Barley – 7.31 fl oz<br>Corn, Popcorn, Rye, Sorghum – 8.53 fl oz<br>Oats – 4.88 fl oz<br>Rice – 6.86 fl oz<br>Wheat – 9.14 fl oz |  |   |
|  |                          | Contain or Sensat                                      | (Rate/1,000 bushels)<br>Barley – 8.2 fl oz<br>Corn, Sorghum – 9.8 fl oz<br>Oats – 5.9 fl oz<br>Rice – 7.8 fl oz<br>Wheat – 10.5 fl oz                   |  | Effective against all grain-infesting moths as well as confused flour beetle and flat grain beetle. Provides suppression only of other weevils and beetles. |
|  |                          | Diacon-D<br>Diacon IGR 2.5                             | 8-10 lb/1,000 bushels<br>(Rate/1,000 bushels)<br>Barley, Rice – 3-6 fl oz<br>Corn, Sorghum, Wheat – 3.5-7 fl oz<br>Oats, Peanut, Sunflower – 2-4 fl oz  |  | Diacon is a growth regulator and does not control adults but is effective against larvae.   |
|  |                          | Malathion 6% Dust                                      | 10 lb/1,000 bushels (wheat, corn, oats, rye or barley)  |  | <b>Malathion is not labeled for rice.</b> Apply as grain is being loaded or moved into final storage for protection from beetles and moths.                 |
|  |                          | Storcide II  | (Rate/1,000 bushels)<br>Barley – 9.9 fl oz<br>Oats – 6.6 fl oz<br>Rice – 9.3 fl oz<br>Sorghum – 11.6 fl oz<br>Wheat – 12.4 fl oz                        |  | Apply Storcide II in 1-5 gal of water into main grain stream as a coarse spray.<br><br>Storcide II is not labeled for corn.                                 |
| <b>Surface treatment</b><br>(inside bins and grain treatment)  | <b>Beetles and Moths</b> | Malathion 6% Dust                                      | 5 lb/1,000 sq ft  | Apply as top-dress on grain bin surface for protection against moths and beetles. <b>Malathion is not labeled for rice.</b>  |   |
|  |                          | Contain or Sensat                                      | 2.6 fl oz/1,000 sq ft   | Effective against all grain-infesting moths as well as confused flour beetle and flat grain beetle. Provides suppression only for other weevils and beetles.   |   |
|  |                          | Diacon-D<br>Diacon IGR 2.5                             | 8 lb/1,000 sq ft<br>1/30 fl oz (1 mL)/1,000 sq ft   | Diacon is a growth regulator and does not control adults but is effective against larvae.  |   |
|  | <b>Moths only</b>        | <i>Bacillus thuringiensis</i><br>(Dipel, SOK-Bt, etc.) | Follow label directions.  | Apply as top-dress for protection against moths only. Incorporate into top 4 inches.   |   |

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| <b>Grain fumigation</b>  | <b>Beetles and Moths</b> | Aluminum Phosphide (R)<br>(Phostoxin, Fumitoxin, Gastoxin, Fumex, Killz-All, Phosfume, Weevil-Cide) | <b>Silos and Concrete Bins</b><br>200-900 pellets/1,000 bu<br>40-180 tablets/1,000 bu<br>10 pellets/ton<br>6 tablets/ton<br>(check label also)  | Grain surface should be level. Apply in gas-tight bins when grain temperature is 60°F or higher. Leave for at least 3 days, preferably 5 days. DO NOT fumigate when temperatures are below 40°F. Use higher rates when infestations are high and/or temperatures are low.  |
|  |                          |   | <b>Butler-Type Bins</b><br>450-900 pellets/1,000 bu<br>90-180 tablets/1,000 bu<br><b>Space Treatments</b><br>pellets: 100-725/1,000 cubic ft<br>tablets: 20-145/1,000 cubic ft<br><b>Bagged Grain or Feed</b><br>150-450 pellets/1,000 cubic ft<br>30-90 tablets/1,000 cubic ft | Always use a gas mask and never fumigate alone. Fumigated grain should be aerated thoroughly before feeding.<br><br>Use a self-contained breathing apparatus and a safety rope. Seal all buildings and storage bins airtight before fumigation. Fumigation is not recommended for storage bins not equipped with fans for aeration.<br><br>Be careful under hot, humid conditions when using aluminum phosphide because phosphine gas may be released quickly under these conditions. Phosphine needs at least 72 hours to kill some immature insects.<br><br>Special training and precautions are needed before using aluminum phosphide. For more information on treatment using aluminum phosphide: <a href="http://www.degeschamerica.com/">http://www.degeschamerica.com/</a> . |
| <b>HOME STORAGE</b>  |                          |   |   |  |
| Protection of small quantities of grain for home storage to be eaten | <b>Beetles and Moths</b> | Heat oven until center of grain is 120 degrees F.<br><br>Cold or freezer treatment at 0 degrees F.  | 30 minutes  | Place in a tight container. Temperature should be checked with meat thermometer. DO NOT use heat on seed to be planted.  |
|  |                          |   | 4 days  | Place container in deep freeze.  |