



On-Farm Application of Protect-It®

Protect-It® is a non-chemical structural and stored grain insecticide powder created exclusively for use in and around stored grains and seeds. **Protect-It®** is made entirely of diatomaceous earth (Figure 1) and silica gel. These non-toxic materials stick to the insect (Figure 2) causing it to lose water and die. Because of its low application rates, this unique (patented) combination of materials provides the most cost effective product of its kind in North America.



Figure 1. Diatomaceous Earth (DE) 90x magnification



Figure 2. DE on insect skin 440X magnification

ALWAYS READ AND FOLLOW LABEL DIRECTIONS

Protect-It® provides the following benefits . . .

- Safe for users, grain handlers and consumers
- No chemical residues on treated grains
- No applicator certification or special storage provisions required
- Works on a broad range of storage pests, including **rusty grain beetles, weevils, flour beetles, Indian meal moth**
- Very long-lasting-will not degrade so long as treated grain is in storage
- Will not affect germination, milling, baking or malting quality
- Can be used in and around animal feeds
- No waiting period after application of **Protect-It®**
- Odorless
- Proven technology
- Registered for all grains and seeds

For the protection of farm-stored grain, follow ALL 3 steps (below):

Step One

Empty Bin Treatment: 1-2 weeks before harvest clean your empty bins and apply **Protect-It®** at the rate of 5 g/square meter (454 g/1000 square feet) to all interior surfaces.

Apply **Protect-It®** to the empty bin using either your aeration fan (Figure 3) or a dust blower (Figure 4).

Calculation

To begin, find out the diameter (ft.) of the bin and the height of the bin to the eaves. For this calculation you need to determine the radius of the bin, which is ½ the diameter.

A. Floor area = Radius x Radius x 3.14

B. Ceiling = take floor area and add 30% (for peaked roof)

C. Wall area = Radius x Height to eaves x 6.29

Add areas of floor, ceiling and walls to determine total area.

First divide total area by 1000 and then multiply this number by 0.454 to determine the amount of **Protect-It®** (kg) required to treat the empty bin.



Figure 3. Aeration fan application



Figure 4. Compressed air duster

Step Two

Grain mass application: Apply **Protect-It®** to **uninfested** grain **immediately** at harvest as grain is being augered into the bin. (Do not store new crop on top of old crop.) After calculating the amount of **Protect-It®** required, apply to grain directly at the auger (Figure 5) or use the truck method as follows:

- After calculating the required amount of **Protect-It®** required to treat the entire truckload of grain, take half of this amount and spread as evenly as possible over the entire surface of the grain in the truck (Figure 6).
- After the truck is about half empty, evenly spread the remaining **Protect-It®** over the surface of the grain remaining in the truck (Figure 7).

See the label for application rates. For example, for a 10 metric ton truck load of wheat, at the rate for wheat of 100 grams per metric ton, you would apply 1000 grams or 1.0 kg. Every 250 mL cup of **Protect-It®** weighs about 50 g, so for this truckload about 20 cups or 5 Liters of **Protect-It®** are required.



Figure 5. Protect-It® being applied at the auger

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Figure 6. Use ½ amount of Protect-It® to cover surface of full load



Figure 7. Use remaining ½ Protect-It® to cover surface of ½ load

Step Three

Surface Dressing: Blow or sprinkle **Protect-It®** over the surface of the grain mass in the bin at the rate of 20 g/square meter (1.86 kg/1000 square feet).

Calculation

Take ceiling area (see calculations for Step One) and divide this by 1000. Multiply this number by 1.86 to give the amount (kg) of **Protect-It®** for surface dressing.