



**wolftrax®**  
INNOVATIVE NUTRIENTS

# Adhesion Testing Granular Fertilizer Blending Guide



### **Pre-Blending Adhesion Test**

Wolf Trax Nutrient applications onto granular fertilizer are limited to about 1% of the blend by weight as stated on the label. That would be 10 kgs of any single DDP or combination of different DDP micronutrients for every 1,000 kgs of your macro nutrients in the blend. However there are many variances in the size of macro nutrients granules that can greatly increase or decrease the amount of surface area of the granules that the DDP's adhere to. This means that you may be able to apply slightly more or slightly less than the 1% guideline.

### **Fertilizer Density and granule and prill size:**

There are many different types of granular fertilizer, fertilizer manufacturers and handling processes that will affect the density of fertilizer and the number of granules or prills per kilogram. Wolf Trax DDP Nutrients stick to the surface of the granules and prills. The smaller granules or prills increases the number of granules and prills per kg of fertilizer. This also increases the amount of surface area that the DDP has to adhere to allowing the use of higher rates of DDP in those blends. This large variation in fertilizer is why adhesion testing is important.

To determine your maximum rate of Wolf Trax DDP we recommend that you should perform an adhesion test if your required application is approaching or exceeding .75% of the blend by weight.

### **Test Protocol:**

- Weigh out 1 kg (1,000 grms) of the required fertilizer blend. The fertilizer being tested should be a sample of the blend that you will be blending with the DDP.
- Pre-sift any dust, fines, etc from fertilizer using a fine screen. A kitchen strainer will also do the job well.
- Weigh out 10 grms of the Wolf Trax DDP you will be blending.
- Place the DDP and the fertilizer into a container with a secure lid and roll the container around to apply DDP evenly onto the fertilizer granules or prills. This should take no longer than 1-2 minutes for the fertilizer blend to become thoroughly coated.
- Sift the fertilizer again and collect and weigh any DDP that comes off the fertilizer.
- The weight of any DDP that comes off while sifting will allow you to calculate your maximum rate for proper adhesion.

### **Example:**

Sifting the sample nets you 1 gm of DDP. That means 9 grms adhered to the 1,000 grms of fertilizer so your maximum application rate is  $9 / 1,000 = .9\%$ .

### **Exceeding the 1% rule.**

This may be possible if you are blending DDP's onto a granular fertilizer blend that has a high percentage of small granules and / or the granules (or prills) have a very rough surface.

### **Test Protocol to determine if you can exceed 1%**

Assume that all of the 10 grms of DDP in the test procedure outlined above, adheres to the macro nutrient fertilizer blend being tested.

- Add 2 grms more Wolf Trax DDP to the fertilizer and DDP used in the test above.
- You are now testing 12 grms of DDP on 1,000 grms of fertilizer or a rate of 1.2%
- Re-agitate the fertilizer in the container for another 1 – 2 minutes to allow the additional DDP time to coat the granules or prills in the blend,
- resift to see if any DDP is not adhering
- Collect and weigh any DDP that did not adhere to the blended fertilizer and recalculate.

Example:

Sifting the blend again nets a small amount of DDP in your collection container. You weigh it and it is 1 gm of DDP. So  $12 \text{ grms} - 1 \text{ gm} = 11 \text{ grms} / 1,000 = 1.1 \%$  as your maximum application rate of DDP onto that particular blend of macro nutrients.

You are now prepared to blend the Wolf Trax DDP with your fertilizer blend.

### **Caution:**

Macro nutrients of the same type from different suppliers (i.e. Urea) may have substantially different adhesion rates due to differences in granule size and the surface roughness of the granule.