The Wind Erosion Demonstration is designed to show the movement of soil particles and the effects of air movement over the soil surface. At low wind velocities the evidence is subtle and not-distinct and requires close observance to pick out these processes. Wind speeds as low as 5-10mph will move the finer particles of soil prior to the surface armoring and stabilizing to a specific velocity. The demonstration is recommended as outdoor presentation. An indoor presentation would require advanced preparation to help capture the soil that leaves the pan. The hood for the demonstration is intended only to capture fine dust particles for observation and is not capable of managing the mess created by the wind over the soil pan.

The demonstration consists of 4 primary components 1. Wind generator and manifold 2. Soil Pan 3. Contact paper 4. Catch hood.

Extract the leaf blower from the tub, remove the lower casing and attach the composting fixture to the bottom the blower. Mount the leaf blower to the wind manifold and clamp to one end of the table. Plug the leaf blower into the cord on the wind manifold. Plug the unit into power. Turn the unit on and set wind speed to as low as possible. There is an anomometer supplied to determine the wind speed of the unit

Place dry soil in the pan, the white plastic sheet is to keep soil from filtering through the bottom of the pan. Put enough soil in the pan to fill the pan.

Clamp the contact paper sticky side up to the table with the table cloth clamps. You may want to wait to remove the protective paper until shortly before the presentation to prevent soiling it with airborne particles, insects, etc.

Clip one of the filter cloths to the front of the hood and clamp the hood to the other end of the table.

Attach the hose to the hood and to the leaf blower.

Place the ribbon stand over the pan. Spray the filter cloth on the hood with cooking oil (PAM) to create a tacky surface to trap soil particles.

When the demonstration is first turned on at a low speed, there will be fine particles trapped on the soil hood that aren't visible to the audience. Stop the wind and show that even at low speeds bare soil is vulnerable to wind erosion. The next step is to show how quickly the soil armors off at different wind speeds. Increase the velocity, for a short time and observe. See how the particles separate out on the hood. Fines will be at the top and heavier, larger particles will be at the bottom.

As the speed is increased the soil will begin a saltation processes where the larger particles will release from the surface and land on the contact paper. Stop the demonstration again to observe each of these processes.

The surface can be disturbed to repeat the process by racking across the surface with your fingers to show how each tillage pass can bring up fine particles that will move at low speeds.

Once these processes have been explained the wind speed can be increased to show how larger particles are dislodged and moved on the soil surface which also breaks down the soil armor.

Place the "Ridge" across the pan surface and place the barriers in the pan to show how they effect wind flow. If the demonstration is run long enough you will be able to see how the wind direction and velocity is changed by the surface barriers and ridges in the way the soil is removed from the pan.

The demonstration can be adapted to several variations and experimentation will let the presenter explain most of the soil erosion processes.

Many of the processes occur instantaneously and are difficult to see. It is recommended that the wind is stopped often for the presenter to explain what the audience should be able to observe.