

Grass Seed Cleaner Finds Painless Way to Clean Out Soil

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Separating soil from grass seed can be a pain. Soil creeps into grass seeds in the windrow because the combine picks it up at threshing time. If threshing gets delayed for any reason and the gophers are actively making mounds, like in 2005, the combine may pick up more soil. This is where the problem starts for growers, cleaners and the seed trade. Even a few pieces of soil in grass seed samples can increase the inert percentage significantly when the seed analysis is performed; but the problem becomes more dramatic when a seed lot fails to meet the strict soil standards of importing countries. This is a concern because many countries that import grass seeds have tight restrictions for soil tolerance. For these reasons, soil separation technologies are becoming very important.

The Oregon State University Seed Laboratory, during its winter workshops for seed cleaners, has been emphasizing the importance of separating most of the soil before the typical seed cleaning operations start. Of course, this is only a theory until someone puts it into practice. We didn't know that someone in the Willamette Valley was already using this preventive approach.



Bill Boyer showing clean seed and the separated soil

Boyer Seed has been using this approach successfully in the seed cleaning facility located in McMinnville, Oregon, since 2002. Bill Boyer, the owner, says enthusiastically, “Why should I feed soil into my machines knowing that it is going to use part of the cleaning capacity to get it out, increase the wear on the debearder, the carter disks, and indents. Putting soil into my machines creates more cleaning problems because the larger pieces break up in the debearder and become the same size as the seeds and weeds, which are then harder to separate. Soil and materials heavier than crop seeds should be removed as the first step in the cleaning process. Only crop and weed seeds should go through the machines so that the screens and indents can do what they are supposed to do. If those two machines used in the cleaning process are overwhelmed with excessive amounts of dirt, the weed removal is much slower as well as

more difficult. The whole process goes faster when dirt is removed first. This allows the rest of the cleaning line to be fed at maximum capacity. As a side note, rocks, combine parts, and other foreign objects are removed at this point before they can jam, damage, or cause problems with other equipment.”



Khalen Boyer, Bill Boyer and Adriel Garay observing a bin full of soil that was separated by an aspirator before feeding the seed into the air-screen machine

Boyer has put this theory into practice by installing a large aspirator at the beginning of the cleaning process. Most soil coming from the field is still in large pieces with higher weight-density than seeds. This is why when the aspirator is set to lift all grass seeds, the heavier soil pieces cannot be lifted and they fall into the bin. The seeds and chaff that are lifted are then fed into the airscreen machine, which is typically the first machine used in a long line of cleaning machinery. The soil collected in the bin is hauled away. This aspiration/blowing operation is different from the usual practice of using light air flow (either aspiration or blowing), in the air-screen machine or later, to discard the lightweight chaff.

The amount of soil that arrives with the seed in a cleaning operation depends on many factors. Some crops bring more soil than others, but Boyer has been using this “preventative process” on all grass seed. He estimates that some raw seed coming from the field can contain 2-10% soil by weight. With this process he removed a total of 50 tons of soil in 2002, 40 tons in 2003, and 30 tons in 2004 from all the seed he cleaned. In 2005, which was a problematic year for soil, he removed a total of 60 tons. This tonnage is based on cleaning 4 to 5 million pounds of grass seed per year. The kind of soil separation he is achieving is impressive. Bill says he will be happy to show and tell others interested in his experience. Sometimes, some simple ideas do not catch our attention until someone puts it in practice. In this case, seeing was believing.

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