

SEED CLEANING FOR GRAIN GROWERS

By Tracy Salisbury and Brenda Frick

Wondering what crops to grow this spring? Considering soil fertility, balancing the rotation, responding to markets? Ease of seed cleaning is another consideration to be added to that list.

Often, grain farmers have a mix of plants in their harvest, whether they intercrop intentionally, have volunteer plants from a previous year, or have weeds that escaped control. Usually it is fairly easy to predict what crops and weeds will dominate in a year, simply by looking at what happened in the past year. Some seed mixtures are difficult to separate. It may be prudent to select a crop each year that separates easily from the likely volunteers and weeds.

When seeds are cleaned, 'contaminants' are removed in a variety of ways. The first step is at the sieves in the combine. Sieves separate seeds mostly by size, although shape can be important as well. Sieves are especially effective at removing small weed seeds from larger crop seeds, such as pigweed from lentils. Some crop mixtures are relatively easy to separate by size, for example, mustard from barley or peas; barley or oats from lentils or peas. Further sieving may be done after combining.

A second stage in cleaning is often done on a gravity table, which sorts seeds by weight or density. This is the most common type of on-farm seed cleaning. It can be used, for example, to separate thistle heads out of peas and frosted kernels out of cereals.

A final cleaning might be done with a colour sorter. A colour sorter may pick out pea chips from oats, for example. This equipment is less common, so this step generally involves extra hauling, as well as additional time and expense. Usually other

methods are used before colour sorting.

Different markets have different levels of concern about other seeds 'contaminating' crops. For example, the milling oat market has a very low tolerance for foreign material, as their customers don't want to see lentil or pea chips in their oatmeal. Concern over wheat allergies has led to a very low tolerance for wheat as a contaminant of oats or flax in many markets.

The feed market generally has the most relaxed requirements for crop purity. Often chips, splits and other crop types are combined in feed mixtures, and legume pieces actually add valuable protein to cereal grains.

A pea/barley mixture, for example, can be an effective intercrop for the feed market, but the two crops may not be separated well enough to sell the barley into the malting or pearling market. This has a bearing on rotation planning. Seeding barley on pea stubble might result in pea contamination that would be difficult to remove from barley. Seeding pea on barley stubble would be less problematic.

Seed cleaners claim that any crop can be cleaned out of any mixture, but it becomes a question of economic feasibility. Separation is usually based on the majority crop. For example, with a flax crop with some volunteer wheat, the wheat would be removed from the flax with settings that resulted in a nearly pure flax sample, and a wheat sample that was much less pure. Growing flax on wheat stubble can result in difficult contamination issues, whereas growing

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wheat on flax stubble leads to less of a problem with contamination.

Several crop combinations present difficulties for seed cleaning. Lentil splits, especially from small lentils, are difficult to remove from flax. Barley is hard to separate from either wheat or oats. Small-seeded lentils are challenging to remove from oats or wheat.

Weed removal can also be a consideration. Weeds can be difficult to remove from flax, as it is relatively small seeded. It is difficult to clean wild mustard or cow cockle from tame mustard. Wild oats are tougher to separate from an oat crop than from other cereals. These seed cleaning problems can be important considerations in crop selection.

Seed cleaning options are critical when planning a successful intercrop. They can also be important in rotation planning, as this year's crop is likely to be mingled with volunteers from last year's crop. Knowing which seeds can be separated easily, and which separations require more time, effort and expense can make planning more effective.

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