QUALITY ASSURANCE PROGRAM FOR SMALL GRAIN SEED

Ronald E. Hagar 1/

So you've made the decision to go into small grain seed production. In planning for your small grain seed program, you've decided that you need some type of quality assurance program. Let's take a look at what goes into a quality assurance program.

The First Step

The first step is company acceptance. The company must be behind the quality assurance program. Without company support, a quality assurance program cannot function. Every employee of the company must be quality oriented. Team work is the key to a quality product.

Source of Seed

To produce a quality crop you must begin with quality seed; seed that is genetically pure, weed free and high in germination. If your planting seed is mixed at planting, your production will naturally be mixed. Choose your source of planting seed carefully. Upon receipt of the seed, have your laboratory pull a sample and test it. Also, have the State Department of Agriculture pull a sample for testing. In my opinion, seed cannot be sampled and tested too many times. For wheat, the Phenol test is very useful in varietal identification. True, some varieties have the same phenol reaction, but many do not. For oats, the "Black Light" is very useful for varietal identification. In other words, use every method available to insure that you have the best possible seed to plant.

Production Sites

Now you've obtained your planting seed and are prepared to begin production. Are you going to use contract growers or company land? A close working relationship with your grower is a must. Clean, well-drained land should be chosen for production. Do not attempt to produce a small grain seed crop on ground that you know to be contaminated with

1/ Mr. Hagar is Director, Quality Control, Terral-Norris Seed Co., Inc., Lake Providence, LA.
FIGURE 1

SUMMARY
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1. Company acceptance and support of program.
2. Establishment of procedures and standards.
3. Teamwork among all personnel involved.
4. Highest quality seed used for planting.
5. Careful choice of land and growers for production.
6. Thorough clean-out and inspection of all equipment - planters to truckbeds.
7. Periodic field visits and inspections.
8. Timely and careful harvesting.
9. Aeration/drying as needed.
10. Proper and adequate conditioning.
11. Storage in clean, cool warehouse.
12. Sampling and testing at every step.
wild onion or garlic. Check the land requirements of your state's seed certification regulations. Most states require the land to be out of small grain production for a minimum of two (2) years, unless you are planting the same variety, same certified grade, or less. In other words, you could plant Registered Doublecrop wheat on the same land year after year. But, if you change varieties, a two year lay-off would be required.

At planting, inspect all planting equipment to insure proper clean-up. If more than one variety is to be planted, have all equipment cleaned carefully to insure varietal purity. If a field is to be split, make sure proper isolation is maintained.

Field Inspections

In early spring, start monitoring the fields. Pay close attention to weed and other crop contaminations. If weeds or other crops start developing, a control program should be initiated early. Certain control measures such as 2-4-D spraying have deadlines for application. After certain dates, the chemical cannot be applied due to state and local laws. Therefore, early identification and control is necessary. Maintaining a close watch over your production will enable you to do a better job at harvest.

Harvest

Harvest time approaches and now other areas must be given attention. Are your storage bins ready to receive the seed? Is the grower going to use on-the-farm storage? Have the combines, grain carts, etc., been thoroughly cleaned? These are areas that must be checked.

Let's look at what the grower must do. Combines, grain carts, and trucks must be thoroughly cleaned? Any one of these areas can cause you trouble. Let's look at an example. A grower planted treated seed rice by air and in doing so, used his grain cart to load the aircraft. During the previous winter, he thoroughly cleaned his combines and also his grain carts and trucks, but he didn't reclean the grain cart used for the rice seed. The grower begins to harvest his small grains and contaminates it with a few grains of treated rice. To the grower, a few grains of rice in a tractor-trailer load of grain is not going to hurt anyone. WRONG! He has failed to realize that it takes only one grain of treated seed to reject the load, not only for seed, but for mill purposes also. This is only an example of what can happen. Prior to harvest, remind all growers of this situation.
Bulk Storage

If farm storage is to be used, check all bins. Have the bins thoroughly cleaned and treated properly for insect control. Don't forget to check under the floor.

Small grain seed are harvested at a time when the outside temperature is climbing, thus not usually affording the farmer with the usual dry, cool conditions of fall. Therefore, the small grain seed should be harvested at a moisture of 13% or below. If the seed are to be stored on the farm for a long period of time, an additional insecticide treatment at the time the seed are placed in the bin is recommended. Be sure to maintain a constant vigilance for heating, insects, etc.

Conditioning

Maintain a close working relationship with all personnel in your operation. Personnel in the receiving area and unloading area must be informed at all times. Instruct your receiving personnel as to what standards are to be used. Maintain a list at this point in the unloading area as to the names of the growers, the variety and class they are producing. The field personnel must notify the receiving personnel as fields are inspected and approved or rejected, thus insuring that no seed enters the plant that did not meet field standards.

As the seed enters the receiving area, take a sample of each load as it goes into a bin. The sample should be taken to your seed laboratory, if one is available, and tested for genetic purity, weed content, and germination. A portion of this sample is combined into a large composite sample for future use. Do not mix high moisture seed. Keep your high moisture seed separate for drying. High moisture and insects are two of small grain seed's worst enemies. If more than one variety is to be dried, the drier must be cleaned between varieties to maintain the genetic purity. Time is essential in handling high moisture grain seed. Do not allow the seed to heat over 95-100°F.

Once you have the grain seed dried and stored, don't forget it. Your bins should be equipped with a temperature sensor every six (6) feet apart. Maintain a close watch for any change in the temperature. If you have a point that starts to heat, turn your air on. If the area continues to rise, either move the grain or circulate it in the bin. The main point is to constantly monitor the temperature and take corrective action immediately.

Now you are ready to condition seed. Is the seed cleaning plant ready? Thoroughly inspect all equipment with which the seed will come in contact. Since you maintained a sample of the seed as it entered the plant, you can visually observe the seed and make the proper cleaning decisions. The knowledge of what is in the seed is of great importance in the conditioning step.
During conditioning, the seed laboratory personnel must monitor the seed constantly. Bagging is a very expensive operation. Why bag the seed if it does not meet your quality standards, or the certification standards. The time to catch a problem is before the seed is bagged. A solution to this problem is to condition the seed into another bulk storage area. Maintain a sample all through the process and then evaluate the seed. The Tetrazolium test and the Phenol or Black Light tests are very important parts of our operation. In twenty-four (24) hours or less, you can notify the bagging crew to start bagging with the satisfaction of knowing that the seed are okay.

Storage

In storing bagged seed, maintain dry, cool conditions. Keep all areas as clean as possible. Flag any lots in the warehouse that need special attention. Remember, you still must exercise control as long as the seed are in your possession.

Key to Quality Assurance

The key to any quality assurance program is control. You must be able to have complete control over the production from the acquisition of the planting seed to the final product in the bag and its delivery into the distribution net. Any one area not properly cared for will only cause all other efforts to be in vain.

Remember, it is your seed the farmer is going to plant. The seed company that wants to stay in business must produce the highest quality seed possible. A good quality assurance program is a major asset to both the farmer and the seed company.