

Know What is in a Bag of Seed

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Good crop production begins with high-quality planting seed. Farmers should not settle for low-quality seed if high-quality seed is available. Most farmers are anxious to reduce production costs, but planting seed is not the place to economize. The additional cost for high-quality seed will pay off in the long run.

Producers should know what they are getting when they purchase seed. In other words: What is in the bag? The answer to this question can be found in the labeling on the bag. Most commonly this labeling is in the form of tags attached to the package or printed on the bag itself. It is important to be familiar with seed tags and the information they provide.

Three basic types of tags can be found on seed bags: (1) certification tags, (2) analysis tags, and (3) treat tags. Because not all planting seed goes through the certification system, certification tags will not appear on every bag; analysis tags are required when seed is sold; and treat tags are required if any seed treatment has been applied. It is important that the producer retain the tags from each lot of planting seed.

Certification Tags

A certification tag on a bag of seed is the symbol of quality and it assures the purchaser that the seed inside the bag is the variety stated and it has met the standards for germination and purity. In addition, the certification class is provided. The certification class refers to the number of generations away from the original variety as developed by the plant breeder. The first class is Breeder or the seed provided by the plant breeder. Progeny from Breeder seed is the Foundation class or one generation removed from the Breeder. The Registered class is progeny of Foundation and two generations removed. The final certification class is Certified. This is the seed most generally available to farmers. Under some certification schemes, the Registered class is omitted and Certified seed is produced from Foundation.

The official seed certifying agency in the state sets minimum standards that must be met both in the field and by the seed. These standards must be no lower

than standards adopted by the Association of Official Seed Certifying Agencies (AOSCA), but they may be higher. Standards may vary from crop to crop, but they ensure the seed will be of high quality. If either field standards or seed standards are not met, seed is not eligible for a certification tag. Information provided on the certification tag includes class of certification, kind of crop, variety, lot number, and name and address of the owner.

The certification class is stated and color coded. The Foundation tag is white, Registered is purple or lavender, and Certified is blue. Most certification tags also contain the analysis, but some Certified tags may contain only basic information and must also have a separate analysis tag attached to the bag.

Kind of crop refers to the specific crop, such as cotton. The variety or cultivar name is also required on the tag. This information assures the producer that the seed in the bag is in fact the stated variety, and that genetic purity is maintained.

Lot number allows seed to be traced back to a specific grower and field. The producer whose name and address appears on the tag may or may not be the actual grower, but is the party responsible for seed contained in the bag.

Analysis Tags

All seed sold must have an analysis tag. The information contained on this tag allows the purchaser to know what to expect in the bag of seed. Items included on the analysis tag are kind and variety, lot number, percent pure seed, percent other crop seed, percent inert matter, percent weed seeds, germination percentage, and date of test. Other items that may be present on the analysis, depending on crop and situation, are percent noxious or restricted weed seed, percent dormant or hard seed, and pure live seed.

Kind and variety refer to the crop and stated variety. The variety may or may not be specified if the seed is not certified. The customer can only be assured of the variety if the bag carries a certification tag.

Lot number is for identification purposes only and is used to trace seed to its originator. Lot number should also be identified with the seed lab test used to provide the purity and germination of the seed.

Pure seed is the percent of the variety named on the tag contained in the bag. A high pure seed percentage is desirable. Factors affecting pure seed, including other crop seed, weed seed, and inert matter, are also listed on the tag.

Other crop seed is the percent of crop seed not named on the tag. Many times seed may become mechanically mixed during harvesting, storing and processing, or through field contamination. A low other crop percentage is desirable.

Inert matter refers to the percent of dirt, sand, stones, sticks, glumes, stems, broken seed, etc. Inert matter contributes nothing to crop yield but may create planting problems. Crops such as some grasses contain a relatively high percentage of chaff and empty florets, and thus may be marketed on the basis of pure live seed (PLS). In such cases, PLS is found on the analysis tag. PLS is determined by multiplying pure seed by germination plus dormant or hard seed and dividing by 100:

$$\text{PLS} = \frac{\text{pure seed} \times (\text{germination} + \text{dormant or hard seed})}{100}$$

Weed seeds in the seed should be very low. Any restricted or noxious weed seeds in the bag must be listed by kind and number of seeds per pound. Any prohibited noxious weeds in the bag will stop sale of the seed.

Germination is important to getting a stand. The analysis tag will show the percent of pure seed that will produce normal plants under favorable field con-

ditions. Producers should look for high germination and high pure seed when purchasing seed. PLS is a function of both purity and germination and can be used to determine the seeding rate necessary for an acceptable stand.

Some crops like legumes and some grasses contain hard or dormant seed. These live seeds require a longer time to germinate. Dormant or hard seed percentages are reported on the tag when they are present in a seed lot. Use this factor plus germination percentage when calculating PLS. The percent hard seed usually is substantially reduced when seed is stored for a year or more before seeding. When possible, avoid seed lots with a high hard or dormant seed percentage.

Germination may change due to environmental conditions when seed is stored for an extended period. Test date is important, as normally a reported germination is reliable for six to nine months. Test date is recorded on the tag, and a prospective buyer should check to make sure it is up to date. If not, request a new germination test before purchasing seed.

Treat Tags

When seeds are treated with poisonous substances such as fungicides or insecticides, the law requires that the bag be labeled to indicate this treatment. The treat tag will note the treatment used.

One of the most common seed treatments is a fungicide to help protect the seed from soil-borne diseases. This protection often can mean the difference between acquiring an acceptable stand and one that is not acceptable. Seed buyers should be aware of these benefits and select planting seed that has been treated.

Remember: Know what you are buying. Be a seed tag reader.