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Chapter 27

Seed Testing Requirements and Regulatory Laws

Federal and State seed laws require that seed used on range and wildland sites be officially tested and appropriately labeled or tagged. It is the responsibility of the seed distributor (who may be the producer, collector, or broker) toward the end user to properly tag each container of seed to comply with these laws. An analysis tag is always required. If seed has been Certified, a seed certification tag will also be attached.

Seed-testing laws and truth-in-labeling laws require that all commercial seed be tagged with the appropriate analysis tag, and that each tag has minimum statements about seed quality and origin. Improperly tagged seed may be subject to legal actions that stop sale movement and use. Violation of State and Federal laws can result in considerable fines.

Information on the analysis tag comes from two sources: 1. The seed producer or dealer provides the common and scientific name, variety (if applicable), lot number, State of origin, year of harvest, and name and address of seller. 2. The laboratory performing the seed test reports percent purity, inert matter, other



crop seed, weed seed, noxious weed seed, germination, hard or dormant seed, total viable seed, and test date on the seed sample they are provided (fig. 1). The seed laboratory also verifies the species (or crop kind) of the seed, but cannot normally verify the cultivar or particular germplasm or accession (ecotype) of the species as claimed by the seed producer or dealer on the analysis tag.

All Federal, State, and private seed-testing laboratories in the United States and Canada are required to use standard procedures as outlined in "Rules for Testing Seeds," published and updated annually by the Association of Official Seed Analysts (1999). Each State has an official seed laboratory that performs standard tests and answers pertinent seed-testing and regulatory questions (Stevens and Meyer 1990). Contact information for these laboratories may be found at www.aosaseed.com. Seed quality testing standards are now in place for some shrubs and forbs, and for most grass species used on Western ranges and wildlands (Association of Official Seed Analysts 1999; Stevens and Meyer 1990). Testing procedures for many other forbs and shrubs have not yet been standardized, accepted, and published. As a result, laboratory tests may be inconsistent.

The certification tag identifies seed species/cultivar/germplasm identity and purity. The Association of Official Seed Certifying Agencies (Utah Crop Improvement Association 1999; Young 1995; Young and others

1995) has established four germplasm development levels: Variety/Cultivar, Tested, Selected, and Source Identified. Generations of a Variety/Cultivar are designated as Breeder, Foundation (fig. 2), Registered (fig. 3), and Certified (fig. 4). Classes of Pre-Variety Germplasm (for which the generations are numerically stated on the tag) are Tested (fig. 5), Selected (fig. 6), and Source Identified (fig. 7). These class names are registered trademarks and can only be used when referring to seedlots that have been Certified by an official agency. Technically, Certified seed can only be offered for sale or sold as Certified Breeder Class, Certified Foundation Class, Certified Registered Class, Certified Certified Class, Certified Tested Class, Certified Selected Class, and Certified Source Identified Class. Noncertified seed is often referred to as "common" or "variety not stated" seed.

In Utah, seed certification is a service of the Utah Crop Improvement Association. Certification provides verification for the variety and germplasm. This is accomplished through wildland and site or field increase inspections, verification of seed stock records, and maintenance of seed identity through harvest, storage, conditioning, bagging, and tagging. Certified seed by definition has known germplasm identity, high genetic purity, high germinating ability, and minimum amounts of other crop seed, weed seed, and inert matter.

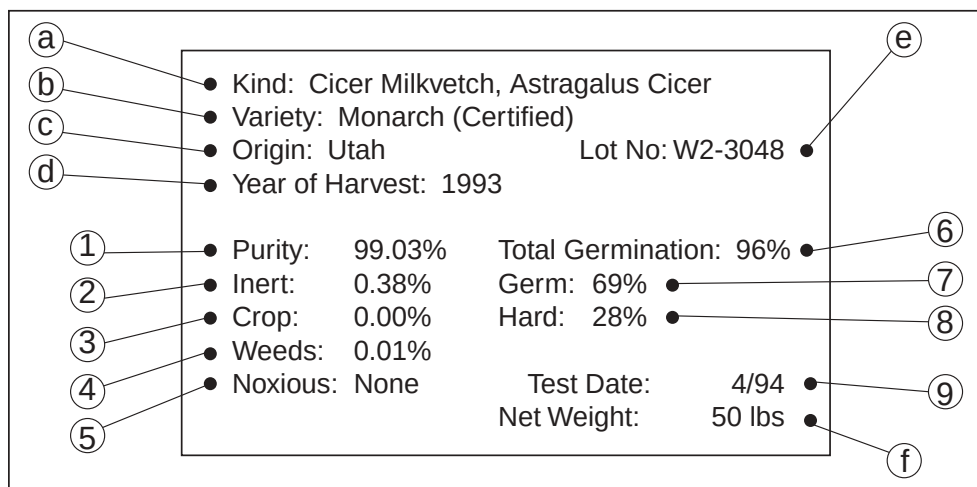


Figure 1—Diagram of a typical analysis tag (dealers name and address deleted). The seed dealer provides the following information: (a) common and scientific name, (b) variety (or "variety not stated" when variety is not known or no variety where none are released), (c) seed origin, (d) date of harvest, (e) lot number, and (f) net weight. The testing laboratory provides results of: (1) percent purity, (2) percentage of inert matter, (3) percentage of other crop seed, (4) percentage of weed seed, (5) presence of noxious weed seed, (6) total viable seed percentage (combination of numbers 7 and 8), (7) actual germination percentage, (8) hard or dormant seed percentage, and (9) test date.

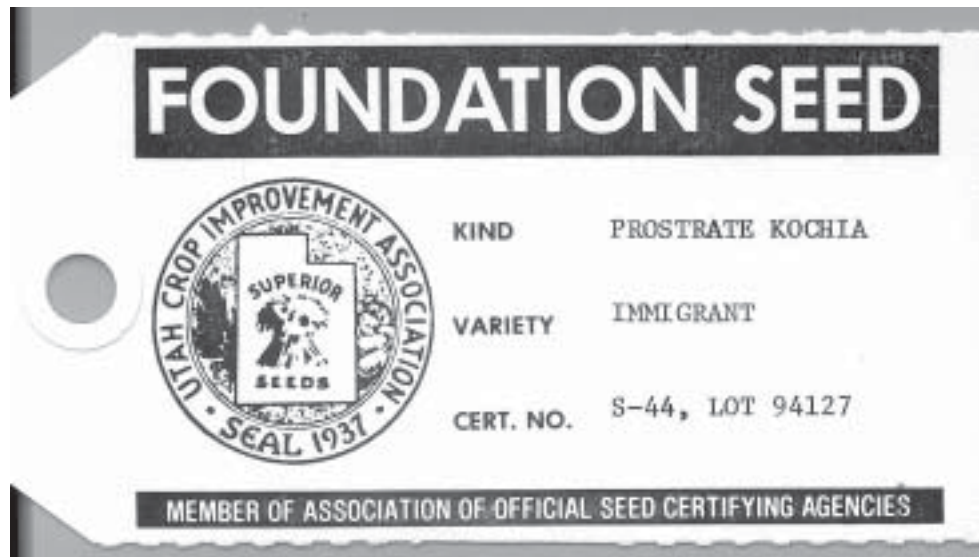


Figure 2—Certified “Foundation Seed” identification tag. Foundation seed is a class of certified seed. It can be the progeny for breeder or foundation seed and is established for the purpose of maintaining genetic purity and identification. Designated color for this tag is white.

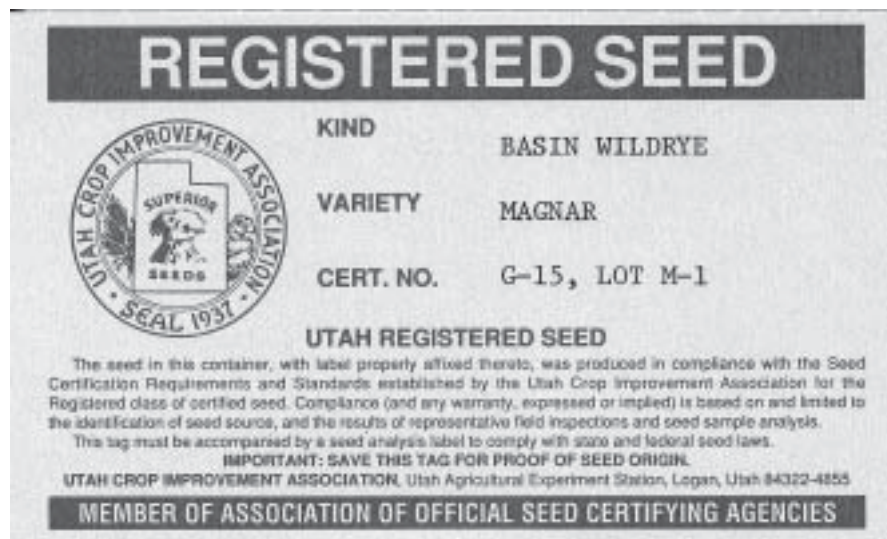


Figure 3—Certified “Registered Seed” identification tag. Registered seed is progeny of breeder or foundation seed. It is used to produce certified seed and to maintain genetic purity and identification. Designated color for this tag is violet.

The majority of native seed occurs on Federal, State, and State wildlife lands. Most agencies require collecting permits. Seed is also collected from private lands. Collectors must obtain required permits and permission to collect seed from any lands.

Agronomic seed crops are usually sold on a bulk-weight basis; seed for range and wildland seedings are more commonly marketed on a pure live-seed (PLS) basis. Seed analysis reports become extremely

important when the pure live-seed method is used. To arrive at a PLS value, percent purity is multiplied by total percent germination. For example, if a seedlot has a purity value of 50 percent and a total germination (germination plus hard or dormant seed) of 80 percent, the PLS percentage would be $0.50 \times 80 = 0.40$ or 40 percent. A 100 lb bag from this seedlot would contain 40 lbs of pure live-seed (40 PLS lbs) (weight x PLS) (Stevens and others 1996).

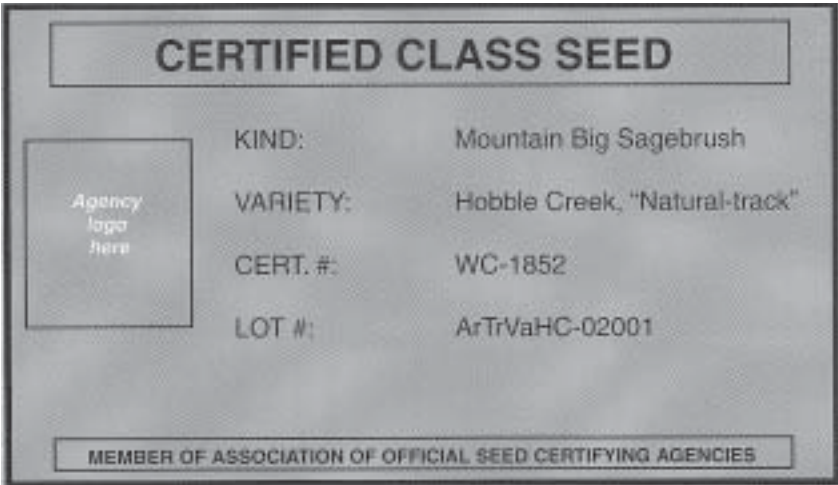


Figure 4—Certified “Certified Seed” identification tag. Certified seed is produced from breeder, foundation, or registered seed. It is the class commonly sold to individuals and agencies for range and wildland seedings. Designated color for this tag is light blue.

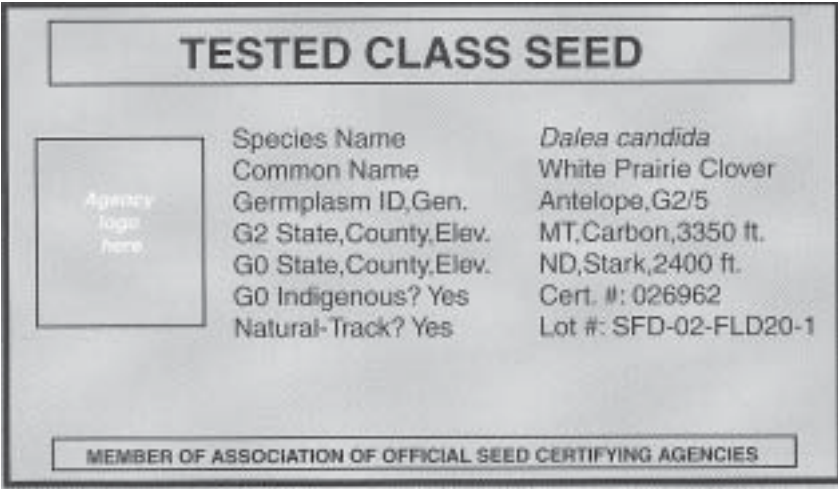


Figure 5—Certified “Tested Class Seed” identification tag. A germplasm that has undergone progeny testing to prove that preferred traits are heritable to succeeding generations. Seed can come from wildland shrubs and cultivated fields and orchards. Designated color for this tag is light blue.

SELECTED CLASS SEED		
Agency logo here	Species Name	<i>Krascheninnikovia lanata</i>
	Common Name	Winterfat
	Germplasm ID, Gen.	Northern Cold Desert, G2/3
	G2 State, County, Elev.	OR, Malheur, 2300 ft.
	G0 State, County, Elev.	ID, Bingham, 4100 ft.
	G0 Indigenous?	No
	Natural-Track?	No
	Cert. #:	00497
Lot #:	KL203	
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Figure 6—Certified “Selected Class Seed” identification tag. A germplasm that has been compared with other germplasms and shows some promising or identifiable trait. Seed can come from wildland stands or cultivated seed fields and orchards. Designated color for this tag is green.

SOURCE IDENTIFIED SEED		
Agency logo here	Species Name	<i>Sporobolus heterolepis</i>
	Common Name	Prairie Dropseed
	Germplasm ID, Gen.	G3/5
	G3 State, County, Elev.	WI, Dane, 800 ft.
	G0 State, Region, Elev.	WI, Southwest, 790 ft.
	G0 Indigenous?	Yes
	Natural-Track?	Yes
	Lot:	2999-SPOHET-3-SE; 03346
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Figure 7—Certified “Source Identification Seed” tag. The original range or wildland collection site is known and certified. Designated color for this tag is orange.

