

## Reading Seed Packaging Labels (Seed Tags)

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### INTRODUCTION

Seed lots vary widely in quality. The key to getting the best quality is to look at the information on the seed tag. Law requires that each lot offered for sale must be truthfully labeled. This applies to a single species or a mixture, certified or non-certified.

The Federal Seed Act and State Seed laws dictate the information found on the seed tag, see example seed tag on page 3. Seed tags are issued by the official seed certifying agency for each state. Missouri Crop Improvement Association is the official seed certifying agency for the State of Missouri as provided in Section 266.011 of the Missouri Seed Law. All state certification agencies comply with the minimum requirements and standards of the Association of Official Seed Certification Agencies (AOSCA).

Missouri Seed Law website <http://www.moga.mo.gov/statutes/c266.htm>

### WHAT TO REVIEW ON A SEED TAG

#### 1) Color of Seed Tag identifies the type of release:

Source Identified	Yellow
Selected or Tested-	Green
Variety-	Blue if certified seed,

White if certified foundation seed grown by variety originator

See example Seed Tags on page 3 - The numbers listed below are referenced on seed tag examples.

**The example seed tags on page 3 were issued to NRCS Elsberry Plant Materials Center by Missouri Crop Improvement Association and contain the following information:**

1. Pre-variety releases: Such as Source Identified, Selected or Tested.
2. Kind: Listing the common name and Genus and species for the scientific name.
  - Example Little Bluestem, *Schizachyrium scoparium*
3. Germplasm ID: the name given to the seed.
  - Example: Northern Missouri
4. Lot#: A listing of letters and numbers that has a meaning to the seed producer to track the seed. Such as in the example on page 3.

- Example: SG1-08-F6MOZ1, means the seed is generation 1(SG1), produced in 2008, (08), in field 6, (F6) from Missouri Zone 1, (MOZ1).
5. Seed Source/Collected: The geographical location where the species was collected from,
    - Example: Northern Missouri
  6. Origin: State of production or propagation.
    - Example: Lincoln County Missouri
  7. Generation: Each successive planting is given a generation number.
    - Example: G1 represents the first generation of production; a G2 would represent a second generation.
  8. Variety releases: May have the same information as presented above in addition to:
    - a) Species: Will have a listing of the name such as *Panicum virgatum*
    - b) Kind: Common name (Example) Switchgrass
    - c) Variety: Name (Example) Cave-in-RockNo source for varieties will be listed only Origin of production, which is listed as Elsberry #6 on the example tag.

**2) Other Seed Labeling requirements are provide on a white label by the seed grower with the following information:**

**Purity is determined for percent pure seed (# 9) by adding (#'s 10-12) and subtracting from 100 percent.**

9. Percent pure seed
10. Percent inert matter
11. Percent weed seed
12. Percent other crop seed

Items 9-12 added together should equal 100 percent

13. Noxious weeds per pound.
  - Is listed only for noxious species based on the number of seeds per pound

**Germination is determined by adding items 14 and 15.**

14. Percent germination, exclusive of hard seeds or dormant seed(+)
15. Percent hard seed and/or dormant seed if present
16. Equals total germination
17. Percent Pure Live Seed - formula below for calculating pure live seed (PLS).
  - $PLS = (\text{pure seed} \times (\text{germination} + \text{dormant/hard seed})/100$
18. Crop year Production
19. Name and address who labeled OR who sells the seed
20. Calendar month, date, and year the seed test was completed

EXAMPLE of Certified Seed Tags

**SOURCE-IDENTIFIED SEED**

Labeled By: USDA-NRCS Plant Materials Center  
2803 N. Hwy 79  
Elsberry, MO 63343

Kind: Little Bluestem (*Schizachyrium scoparium*)  
GenplasmID: Northern Missouri Ecotype  
Lot# SGI-08-F6M071  
Seed Source/Collected: Northern Missouri  
Grown in Lincoln County, Missouri  
Prod. ID: 9079004  
Generation: 61

Crop Year: 2008-09

ORIGIN: MISSOURI

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

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**FOUNDATION SEED**

Labeled By: USDA-NRCS Plant Materials Center  
2803 N. Hwy. 79  
Elsberry, MO 63343

Lot # SFD-08-F11  
Date Tested 3/09  
Net Wt. 50 LB.  
MO. Permit  
Out State #

Kind: Switchgrass  
Variety: Cave-In-Rock

PURE SEED	98.50 %	INERT	1.50 %	OTHER CROP	0.00 %	WEED SEED	0.00 %
GERMINATION	36 %	HARD SEED	0 %	DORMANT SEED	41 %	TOTAL	77 %

Nox Weeds/Lb 0  
PLS 75.85%

2008-2009

569804

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EXAMPLE of Seed Growers Labels

Release/Accession: Cave-In-Rock (PI #: 469228)  
Crop/Species: *Panicum virgatum* / switchgrass  
Lot Number: SFD-08-F11

Test Date: 3/3/2009  
Germination: 36%  
Hard Seed: 41%  
Total Viability: 77%  
TZ Tested: No  
PLS: 75.845%

Pure Seed: 98.5%  
Inert: 1.5%  
Other Crop: 0%  
Weed Seed: 0%

Origin: Elsberry  
Year Grown: 2008

Net Weight: \_\_\_\_\_ lbs

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Release/Accession: Cave-In-Rock (PI #: 469228)  
Crop/Species: *Panicum virgatum* / switchgrass  
Lot Number: SFD-08-F11

Prohibited Weeds:  
Restricted Weeds:  
Other Crops:

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## SEED INDUSTRY TERMINOLOGY

### Definitions of Terms:

**Cultivar** – Plant materials intended for seed production under cultivation that has clearly distinguishable characteristics and has been approved through a formal process. Cultivar can be differentiated by one or more identifiable morphological, physiological, or other characteristics from other cultivars. Uniform in that variations of characteristics are describable. Stable in that the characteristics will remain unchanged to a reasonable degree of reliability when reproduced.

**Variety** – The botanical nomenclature division consisting of more or less recognizable entities within species that are not genetically isolated from each other, below the level of sub species, and is indicated by the abbreviation “var.” in the scientific name. The rank of taxa below subspecies but above forma: a plant which retains most of the characteristics of the species, but differs in some way such as flower or leaf color, size of mature plant, etc.

### Pre –varietal Germplasm:

**Source Identified Class** – This is propagating materials such as seed, seedlings, or other propagating materials collected from natural stands, seed production areas, seed fields, or orchards where no selection or testing of the parent population has been made.

**Selected-** progeny of phenotypically-(bodily characteristics) selected plants of untested parentage that have promise but no proof of genetic superiority or distinctive traits.

**Tested-** seed or plants produced from parentage that has been tested and has demonstrated genetic superiority or distinctive traits.

**Accession number**– Plant material (plant, seed, or vegetative parts) collected and assigned a number to maintain its identity during evaluation, increase, and storage.

**Ecotype** – a group of genetically similar populations that are adapted to a particular environment. Different source –identified releases may be similar and may not be distinguishable with phenotypic traits.

**Eco-Region** or **Eco-zone**–A designated area or zone of a species that have been naturally selected by adaptability to similar environments.

**Generation** – Each succeeding production year designates a generation. Natural collection is Generation 0. Seed produced in a production area the next year would be Generation 1. Subsequent years would be designated G2, G3, etc.

**Germplasm-** is genetic material that determines the morphological and physiological characteristics of a species.

**Native Species** – A native plant species is one that occurs naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions. Its presence and evolution in an area are determined by climate, soil and biotic factors.

**Origin** – As used in the seed industry applies to the State of production or propagation.

**Pre-Variety Germplasm** – Eligible species include indigenous or non-indigenous trees, shrubs, forbs, grasses which have not been released as a variety. This includes source identified, selected, tested, and germplasm class releases.

**Seed Standards** – State and Federal Seed Laws regarding labeling must be observed.

**Source** – The geographical location where the species was collected from. This would be for species collected from native stands.

**Wildland Collection** – Selections from natural stands. Geographical, latitudinal, or other appropriate boundaries or descriptions should be recorded.

## SEED CERTIFICATION

The purpose of seed certification is to preserve genetic purity and identity. It is an Association of Official Seed Certifying Agencies (AOSCA) - program enabling seed companies to market genetically pure seed. Certification services are available for field crops, turf grasses, vegetables, fruits, vegetative propagated species, woody plants and forbs. Once seed has been certified, it qualifies for the official "blue" certified seed tag and meets state, federal and international seed law requirements.

Requirements for producing certified seed include special land requirements, planting eligible stock, field inspections, proper seed labeling and meeting standards based on complete lab analysis.

### Four seed classes

**Breeder seed** - seed directly controlled by the originating or sponsoring plant breeding organization.

**Foundation seed** - the progeny of Breeder or Foundation seed handled to maintain specific genetic purity and identity.

**Registered seed** - the progeny of Foundation seed handled to maintain satisfactory genetic purity and identity.

**Certified seed** - the progeny of Breeder, Foundation or Registered seed handled to maintain satisfactory genetic purity and identity.

## **SUMMARY**

Use the information on the seed tag and label to determine the quality of the seed you are purchasing. This will ensure that genetic identify and mechanical purity needed to help ensure a successful, weed-free, uniform seeding.

Purity and germination percentages found on the seed tag determine Pure Live Seed from which the bulk- seeding rate is calculated. The seed tag will list the weeds including common, restricted, and prohibited found in the seed lot. Remember that weeds listed as common, restricted, and prohibited vary by state and no seed can be sold if it contains prohibited weeds. Seed that is moved across state lines must meet the most restrictive state's requirements. By monitoring the weed species in the lot, you can control what weeds are seeded in a planting.

The cheapest seed is not always the most economical. By comparing the purity and germination percentage between seed lots or mixes, you can see clearly which lots or mixes will produce the most potential seedlings after planting. All seeding recommendations are given in Pure Live Seed (PLS) rates.

Always place your order to the seed dealer as PLS seeding rate and check to make sure the dealer has mixed the seed correctly.