

Calculating Seeding Rates for Coated Seed

Seed tags provide information which is vital for calculating seeding rates. Currently, some seed is sold as “coated seed”. What is coated seed? How is coating reported on the seed tag? How does coating affect seeding rate calculations?

Coating materials and their thickness vary among “coated seeds”. Coating material is primarily a mineral such as limestone, gypsum, pumice, or mica, combined with a polymer to bind the material to the seed. Mica (good flowability) and pumice are typically used for lighter weight coatings while rough limestone (gypsum) is used for heavy coatings. Ingredients such as fungicide, fertilizer, colorant, and Rhizobium are often included with the coating. Coatings are often



Examples of variability in seed coating on different seeds is shown above.

layered to provide optimal activity and longevity of the added ingredients. Besides providing a way to incorporate other ingredients to seed, coating can also add uniformity and size to seeds that are otherwise very small, irregular shaped, or do not readily flow.

On the seed tag, coating material is reported as part of the % inert matter. A statement will also be included on the tag indicating what % of the inert matter is coating material. Active ingredients such as fungicide, insecticide, etc. used to treat the seed or added to the coating material are also listed on the tag.

Pure live seed calculations for figuring seeding rate are the same for coated or uncoated seed (provided the coating is part of the purity% on the tag). Pure live seed (PLS) is calculated as: % pure seed X % total viability (germ + hard seed + dormant seed). As the coating material adds weight to the seed lot in the form of inert matter, it will take more bulk weight of coated seed than uncoated seed (of the same seed lot) to plant equivalent seed populations or seeding rates.

Below is an example of the effect that different seed coatings have on the amount of bulk seed needed to achieve the same PLS seeding rate.

KIND: ALFALFA		LOT #: 442-7-160499-17528CO	
VARIETY: VERNAL			
PURE SEED	65.80%	TOTAL GERM & HS	90%
CROP SEED	0.05%	GERMINATION	80%
INERT	*34.10%	HARD SEED	10%
WEED SEED	0.05%	TESTED	12/2014
NET WEIGHT	50 LB	ORIGIN	CAN
NOXIOUS WEED	0%	AMS 5761	
*INCLUDES 34.00% COATING MATERIAL			
SEED HAS BEEN TREATED WITH APRON XL. DO NOT USE FOR FOOD, FEED OR OIL PURPOSES.			
NITRAGIN GOLD EXPIRATION DATE 01/2015.			
ABC SEED COMPANY 123 HARVEST WAY BISMARCK, ND 58502			

The seed tag provides the information needed to determine the amount of bulk seed required to achieve the proper seeding rate.

Alfalfa Seed - 50 lb. bag	No coating*	Light-coated (9%)*	Heavy-coated (34%)**
Total % germination (from seed tag)	90%	90%	90%
% Pure seed (from seed tag)	97%	88%	65.8%
Pure live seed (total viability X pure seed)	87.3%	79.2%	59.2%
Bulk lbs/ac of seed needed to achieve full seeding rate of 7 PLS lbs/acre	8.0	8.8	11.8

*hypothetical numbers used for examples

**numbers taken from the seed tag shown