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Pure Live Seed

R. C. Kinch

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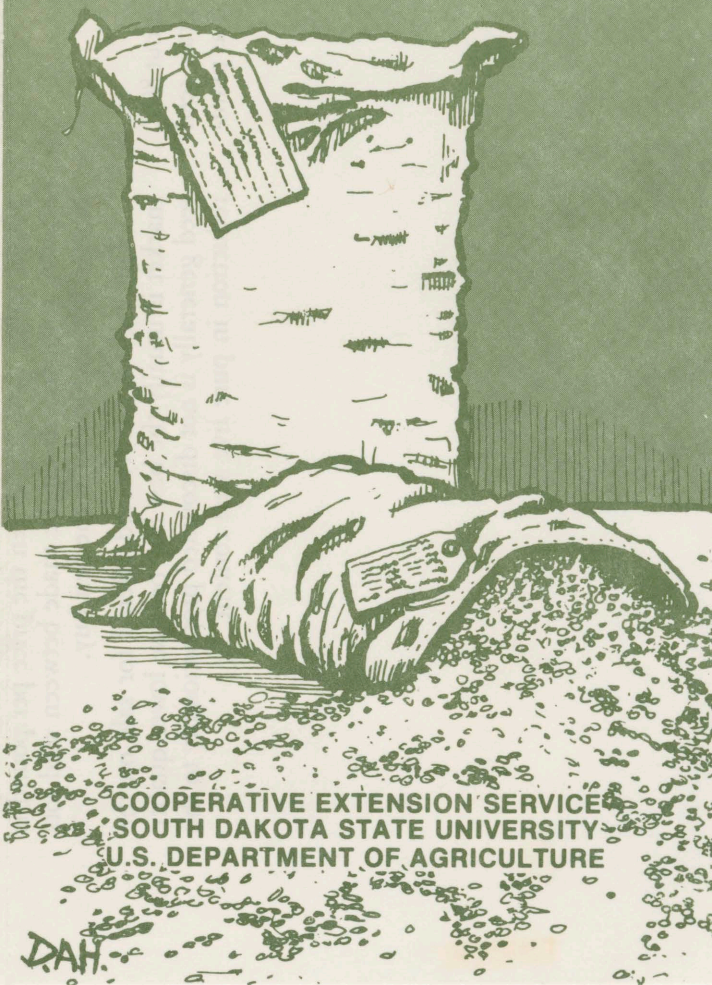
Website: extension.sdstate.edu

Phone: 605-688-4792

Email: sdsu.extension@sdstate.edu

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Pure Live Seed



COOPERATIVE EXTENSION SERVICE
SOUTH DAKOTA STATE UNIVERSITY
U.S. DEPARTMENT OF AGRICULTURE

DAH.

Pure Live Seed

FS 182

by R. C. Kinch, Professor of plant science

How much good seed is there in a bag? How good is the seed? How many pounds of worthless material (seed that will not grow, inert material, weed seeds) does one buy when a bag of seed is purchased? These questions and many others may be asked every time a bag of seed is bought or put in a planter.

The seed tag on each container of seed gives some information about the kind and quality of the seed. However, the actual quality of the seed is a combination of many factors and unless all are considered the buyer does not have true knowledge of how much good seed actually is in the bag.

Two of the more commonly considered items on the seed label are the pure seed (purity) and germination percentages. A combination of these two gives a composite single figure, *Pure Live Seed (P.L.S.)*, that shows the percentage of pure live seed. Pure live seed is an integrated quality expression and is derived by multiplying the pure seed by the germination.

Bromegrass		Lot No.	
Variety		Kind	
Pure Seed	88.45 %	Germination	91 %
Crop Seed	.12 %	Hard Seed	%
Inert Matter	11.19 %	Total Germ. & Hard Seed	%
Weed Seed	.24 %	Date Tested	1/1/74
		Origin	S. Dak.
Name & Number of Secondary Noxious Weed Seeds			
SM-1046-8314			

The bromegrass seed tag shows 88.45% pure seed and 91% germination. To determine the pure live seed multiply the pure seed (88.45%) by the germination (91%) and divide by 100.

$$\frac{88.45 \times 91}{100} = 80.48\%$$

The P.L.S. figure (80.48%) shows only about 80% of the material in the bag is good bromegrass seed and about 20% or one-fifth is worthless as far as plant-

ing is concerned. A pure live seed percentage may be determined on any other kind of seed that has been tested including small seed legumes such as alfalfa, sweet clover, red clover, etc., that have hard seeds.

To determine pure live seed on a sweet clover seed lot labeled: pure seed 99.45%, germination 65%, and hard seeds 22%, add the germination and hard seeds (65% + 22% = 87%), multiply by pure seed (99.45%) and divide by 100.

$$\frac{99.45 \times 87}{100} = 86.52\%$$

Not all hard seeds are live seeds but if the seed has a bright color, is well cleaned, and is relatively free of immature or shrunken seeds practically all of the hard seeds are alive at the time of the test.

Since P.L.S. indicates the per cent of good seed in a seed lot, it can be used to compare seed lots to determine which is the higher in quality. Also, minimum pure live seed standards can be established for different kinds of seeds to assure a specified quality of seed.

SEED PRICE DETERMINATIONS

After the pure live seed figure is determined, the actual cost of the good seed in a bag can be calculated by dividing the cost per pound of seed by P.L.S. If the bromegrass seed in the first example is being sold for 35c per pound, the cost per pound of pure live seed is calculated by dividing the cost per pound (35c) by P.L.S. (80.48%).

$$\frac{35c}{80.48\%} = 43c \text{ (cost per pound pure live seed)}$$

Actually the good usable seed is costing 43c per pound rather than 35c. When the price per pound is known, comparisons can be made between seed lots to determine which lot is the best buy.

The highest quality seed offered for sale on the market is usually the best buy because lower quality seed generally is not discounted proportionally to the reduction in pure live seed content.

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Pure Live Seed

By R. C. Knab, Professor of Plant Breeding

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