**Pure Live Seed (PLS) Rule Proposal 6-Amended**

**Purpose:** The purpose of this proposal is to change the reporting percentage of pure live seed (PLS) from a whole number to two decimal places.

**Present Rule:**

6.2.k. Pure live seed. —The percentage of pure seeds in a lot that are viable.

The basic formula to calculate Pure Live Seed (PLS) is:

Percent (%) Pure x Percent (%) Total Viable / 100 = % PLS

where

% Total Viable = % Germination + %Hard Seed + %Dormant Seed

Example:

Pure seed = 98.55%; Germination = 67%, Hard seed = 5%, Dormant seed = 17%

Step 1: % Total Viable = 67% + 5% + 17% = 89% Total Viable

Step 2: % Pure Live Seed = % Pure x % Total Viable

 100

= 98.55% x 89% = 87.7095%

 100

Step 3: Round to nearest whole number = 88% PLS

Note: In all cases % total viable and % pure seed used to calculate the % pure live seed must be from the same working sample. The correct procedure according to the AOSA Rules for Testing Seeds is to complete the purity analysis, germinate the pure seed, and determine the % of hard and/or % dormant seed, as applicable according to methods in Table 6A, at the conclusion of the germination test.

**Proposed Rule:**

6.2.k. Pure live seed. —The percentage of pure seeds in a lot that are viable.

The basic formula to calculate Pure Live Seed (PLS) is:

Percent (%) Pure x Percent (%) Total Viable / 100 = % PLS

where

% Total Viable = % Germination + %Hard Seed + %Dormant Seed

Example:

Pure seed = 98.55%; Germination = 67.25%, Hard seed = 5.5%, Dormant seed = 17.5%

Step 1: % Total Viable = 67.25% + 5.5% + 17.5% = 90.25% Total Viable

Step 2: % Pure Live Seed = % Pure x % Total Viable

 100

= 98.55% x 90.25% = 88.9414%

 100

Step 3: Round to ~~nearest whole number~~ two decimal places = ~~88%~~ 88.94% PLS

Note: **The % germination, % hard seed, and % dormant seed are to be calculated using the raw data to two decimal places and not the rounded numbers.** In all cases % total viable and % pure seed used to calculate the % pure live seed must be from the same working sample. The correct procedure according to the AOSA Rules for Testing Seeds is to complete the purity analysis, germinate the pure seed, and determine the % of hard and/or % dormant seed, as applicable according to methods in Table 6A, at the conclusion of the germination test.

**Harmonization and Impact Statement:**

The Federal Seed Act does not state how to report the final number. It only includes the formula to be used:

201.64 Pure live seed.

The tolerance for pure live seed shall be determined by applying the respective tolerances to the germination plus the hard seed and dormant seed, and the pure seed.



ISTA does not define pure live seed, so this rule proposal would not impact harmonization with ISTA.

This rule proposal would cause the AOSA Rules to not harmonize with the Canada M&P. The Canada M&P under section 4.11.5.b.(xii) requires the PLS to be reported as a whole number.

(xii). Pure Living Seed is to be reported as a percentage calculated to the nearest whole number.

(See Section 4.11.4.b)

**Supporting evidence:**

When the definition of PLS was placed into the AOSA Rules for Testing seeds, according to the authors it was reported to a whole number because that is how the germination percentage is reported. When seed is being sold off a percentage and monetary basis, rounding to a whole number can greatly impact the buyer or seller depending on the rounding. If PLS is rounded down to a whole number, the seller is not getting the accurate dollar value of their seed and the customer is getting more than what they are paying for. If PLS is rounded up to a whole number, the buyer is getting less than what they are paying for, and the seller is getting paid for seed that isn’t there.

The agronomy/agriculture field is going with a focus more on precision agriculture. PLS is being used to calculate how many pounds of corn, soybeans, small grains, etc. of a seed lot will need to be planted to obtain a desired plant population in the field. Seed testing should provide the best and most accurate information for producers in calculating planting rates for desired field populations.

Reviewing native company’s websites, the price of seed per pound of PLS ranges from $10.20 to $720.00. At $720/lb. of PLS a difference of 88.00% PLS versus 88.48% PLS makes a difference of $3.46/lb. of PLS. In this situation the seller is being shorted $3.46 per pound of PLS and the buyer is getting 0.48% more seed than what they are paying for. On the other side selling at 89.00% PLS versus 88.55% PLS, the seller is getting $3.24/lb. of PLS more than what they are selling. The buyer is believing they are paying for 89%/lb. of PLS when they are being shorted 0.45%/lb. of PLS.

As seed analysts it is our job to provide truthful and accurate information to the customers. By rounding instead of reporting to two decimal places it appears that we are not providing truthful and accurate information to either the buyer or the seller of the seed.

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