



2010 *Poa Secunda* Referee

Region I -- Northwest

Purpose: This *Poa secunda* referee was developed to determine the capability and effectiveness of utilizing a UBP for *Poa secunda* seed while providing equal to or greater results than the current testing procedure.

Introduction:

- Currently, *Poa secunda* seed is analyzed according to PSU definition #14, which states a caryopsis with some degree of endosperm development can be detected (either by **slight pressure** or **by examination over light**).
- *Poa secunda* seed commonly contains immature seed or caryopses which consequently consume valuable analysis time due the separation process of “some degree of endosperm” seeds and actual empty seeds.
- Utilizing the UBP for *Poa secunda* seed would significantly decrease various analyst discretion when classifying immature caryopses as well as decrease damage to fragile immature seed during analysis.

Objectives:

- ❑ Determine the established UBP provides results equivalent to the current method.
- ❑ Determine if the blowing point provides equal results for the different *Poa secunda* types (Big, Sandberg, and Canby bluegrasses).
- ❑ Determine the time savings that a UBP would create for analysts and labs.
- ❑ Determine if the UBP will provide consistency in testing among analysts and laboratories.

Materials and Methods:

- Samples were attained from various lots of Sherman, Sandberg, and Canby bluegrasses.
- These samples were used to define a factor based off of the Kentucky bluegrass blowing point.
 - Based on the gate opening of Kentucky bluegrass a factor of 1.18 was determined to be the optimum separation for *Poa secunda*.
 - A factor of 1.18 was the cross-over point for maximum PLS (pure live seed).
- The decision to use this factor was also based on *Poa secunda* seed being proportionally larger in size than *Poa pratensis* varieties while *Poa Trivialis* is much smaller.

Materials and Methods:

- Three *Poa secunda* seed samples were used in the referee. Sandberg, Big, and Canby bluegrasses were divided into two sets of three purity samples.
- The first set of three samples were tested using the current AOSA method and the second set of three samples were analyzed using the proposed method.
- 5 seed laboratories participated.
- Germination testing was conducted on the pure seed portion of the two sets of three purity samples, as well as the light fraction (blowings) from sample 1, 2, & 3, and hand picked empty seed (inert) from samples 4, 5, & 6.

Results and Discussion:

Type	Purity %	Inert %	Germination %	Germinated seeds
Big	91.86	8.14	51	3
Canby	92.50	7.50	59	3
Sandberg	96.58	3.42	66	3
Big	95.81	4.09	44	4
Canby	88.48	11.51	59	31
Sandberg	96.32	3.68	68	4

Blue is proposed UBP method
Yellow is current hand method



Results and Discussion:

- The germination results between the two methods remained comparable.
- The UBP eliminated damaged/broken caryopses caused by slight pressure by use of forceps.
- PLS increased slightly by use of UBP.

Results and Discussion:

Time savings for the proposed method ranged from 1 hour – 1 hour 40 minutes per sample for a 1.2 gram purity.

Lab	Proposed method	Current method	Time saved	Total time saved x 3 samples
Lab # 1	1) 6 min 2) 6 min 3) 6 min	1) 57 min 2) 90 min 3) 20 min	1) 51 min 2) 84 min 3) 14 min	2.5 hrs
Lab #2	1) 5 min 2) 4 min 3) 4 min	1) 185 min 2) 91 min 3) 37 min	1) 181 min 2) 87 min 3) 33 min	5 hrs
Lab # 3	1) 22 min 2) 12 min 3) 10 min	1) 35 min 2) 64 min 3) 22 min	1) 13 min 2) 52 min 3) 12 min	1.3 hrs
Lab #4	1) 9 min 2) 7 min 3) 7min	1) 70 min 2) 108 min 3) 79 min	1) 61 min 2) 101min 3) 72 min	3.9 hrs
Lab #5	1) 21 min 2) 20 min 3) 18 min	1) 47 min 2) 52 min 3) 43 min	1) 26 min 2) 33 min 3) 25 min	1.4 hrs

Additional information - etc.

- A secondary exercise was conducted to measure if the proposed method provided equivalent results between the different *Poa secunda* types as found in commerce – Big, Sandberg, and Canby bluegrasses.
 - 50 Samples were tested using the proposed blowing method. The heavy and light fractions were then analyzed for misplaced seeds.
 - Preliminary results show that a minimal number of seeds are being misplaced using the proposed UBP method.
 - This data collection will continue thru the 2010 harvest season.

Conclusions:

- ❑ The results of this referee show that the proposed method is equal to than the existing method.
- ❑ The proposed UBP should result in fewer viable seeds being classified as inert or damaged during analyzation.
- ❑ The proposed UBP will result is significant time savings.
- ❑ The germination results using the UBP method were consistent with the current testing method.



Acknowledgements:

- We would like to thank all the participants of this referee.
 - Oregon State University Seed Laboratory
 - J&T Green Seed Services, Idaho
 - California Department of Food and Ag
 - Utah State Seed Laboratory
 - SGS Canada Inc.



Questions?
