

Rule Change Proposal No. 1

PURPOSE: To provide for purity and germination testing procedures for this seed kind.

PRESENT RULE: None

PROPOSED NEW RULE:

Table 1. Weights for working samples.

Kind of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious weed seed or (grams)	Approximate number of seeds per gram	Approximate number of seeds per ounce
<i>Aeschynomene americana</i> L. --deervetch --jointvetch, American	8	80	326	9254

Table 3. Methods of testing for laboratory germination.

Kind of seed	Substrata	Temperature °C	First count (days)	Final count (days)	Additional Directions
<i>Aeschynomene americana</i> L. --deervetch --American jointvetch	P, T	20-30; 20-35	5	14	Hard seeds: see sec. 4.2d and 4.9k (6). Swollen seeds: see sec. 4.2e and 4.9k (6)

SUPPORTING EVIDENCE:

Aeschynomene americana, American jointvetch, is marketed in the southeastern region for use as a forage crop and in establishing game plots. The Pure Seed Unit (PSU) is seed or broken seed larger than one-half the original size with at least a portion of the seed coat attached. Since *Aeschynomene americana* is in Fabaceae separated cotyledons, irrespective of whether or not the radicle-plumule axis or more than half the seed coat may be attached, or both, are considered inert matter.

Due to the limited number of samples that are received for seed testing, the following weight determination was performed on 12 lots of *Aeschynomene americana*. For each lot, eight weight determinations were made for 100 seeds. As shown on the data sheet, the mean purity working weight determined by this method is 7.7 grams. The purity weight was rounded to the next whole number to assure for a minimum of 2500 seeds. The noxious weed seed or bulk exam weight was calculated at ten times the purity weight value.

Lot No.	Mean Wt. (gm) Per 100 seed	Mean No. Seed/gm	Mean No. Seed/oz.	Minimum Purity Working Wt. (gm)	Minimum Noxious Working Wt. (gm)
1	0.2933	341	9666	7.3	73
2	0.3247	308	8731	8.1	81
3	0.2927	342	9686	7.3	73
4	0.3180	314	8915	8.0	80
5	0.3311	302	8562	8.3	83
6	0.2932	341	9669	7.3	73
7	0.3103	322	9136	7.8	78
8	0.3123	320	9078	7.8	78
9	0.3031	330	9353	7.6	76
10	0.3046	328	9307	7.6	76
11	0.3221	310	8802	8.1	81
12	0.2794	358	10147	7.0	70
Mean	0.3071	326	9254	7.7	77
Standard deviation:	0.0068				
Coefficient of variation:	2.2				

Aeschynomene americana, jointvetch or deervetch, is marketed in some southeastern states for wildlife forage. By telephone survey, it was determined that two temperatures, 20-30 °C or 20-35 °C, and two media, petri dishes or germination towels, are used by the laboratories that test this seed kind. Hard seeded-ness and dormancy are characteristic of fresh jointvetch seed.

Materials and Method: Two lots each of *Aeschynomene americana* were sent to 14 laboratories to determine a germination method for inclusion in the Rules. Thirteen laboratories participated in the referee tests. Twelve laboratories tested the jointvetch in covered petri dishes with two layers of water-moistened blotters at 20-30 °C and 20-35 °C and four laboratories participated in the germination towel referee at 20-30 °C and 20-35 °C. Additionally, laboratories were instructed to do first counts on the 5th day with final counts on the 14th day. On the 14th day, hard seed were to be counted and removed; swollen seeds were to be left for an additional 7 days with and without piercing.

Results and Discussion: Data is detailed in tables 1-4. Statistical analyses were determined by using the Tattersfield method (Tattersfield, 1979). Lot 1, the better quality lot, germinated well in all test conditions. Lot 2, a lower quality lot, performed better in petri dishes with two water-moistened blotters. The standard deviation and variance were higher for lot 2 using germination towels. Some of the laboratories commented that there was some mold associated with seeds in lot 2. A few laboratories reported using germinators with lights in the petri dish tests. Possibly, the light may have inhibited the mold growth. No significant difference was noted between the two temperature ranges tested. However, piercing the swollen seeds did produce a small increase in the germination percentage. Piercing must be done carefully so as not to injure the embryo. One laboratory suggested using the Tetrazolium test on the swollen seeds to determine the amount of dormancy.

References: Tattersfield, J.G. 1979. Assessment of results of referee tests on germination. Seed Science and Technology. 7:247-257.

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