

RULE PROPOSALS - 2001

AOSA Rules Committee
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The following thirty proposals for changes in or additions to the AOSA Rules have been reviewed and approved by the Rules Committee for further consideration by the AOSA membership at the 2001 meeting. Please note that approval does not mean that the committee or the members endorse these proposals.

These proposals are published in this issue of *The Seed Technologist Newsletter* so that they may be evaluated prior to the annual meeting. The names and addresses of the authors are included. Please contact them if you need additional information. You may also submit written comments to the Rules Chair prior to the meeting. Although comment time will be available during the Open Rules meeting, extensive changes to the proposals will not be made during the meeting. Since only a limited number of copies of the proposals will be available at the Open Rules meeting please bring your copy of this Newsletter with you.

Passed

Rule Change Proposal No. 1

Proposal: The purpose of this proposal is to specify which listing in Table 3 to use when both genus and species and genus spp. is listed.

Present Rule

New Rule

Proposed Rule

4.9 Explanation of Table 3

Table 3 contains specific germination requirements for the kinds of seeds listed in column 1. If the genus and species is listed, that listing shall be used. If the species is not listed, use the spp. listing for that genus. Some explanations...

Supporting Evidence

There are 12 examples of this situation in Table 3. They are *Acer*, *Aquilegia*, *Betula*, *Cucurbita*, *Helianthus*, *Hibiscus*, *Ipomoea*, *Lupinus*, *Penstemon*, *Physalis*, *Quercus*, and *Solanum*. Some of these situations came about when we combined Tables 3, 4, and 5. This proposal is to put in print that which is assumed by most of us.

Date Of Proposal

August 22, 2000

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Passed

Rule Change Proposal No. 2

Purpose: To add "oregano" as a common name for *Origanum vulgare* in AOSA Handbook 25.

Present Rule: AOSA Handbook No. 25 - *Uniform Classification of Weed and Crop Seeds* (1999) - p. 88:

Origanum vulgare (Lamiaceae) H W W C W W W W
---marjoram, wild

Proposed Rule:

Origanum vulgare (Lamiaceae) H W W C W W W W
---marjoram, wild
---oregano

Supporting Evidence:

Cultivated forms of *Origanum vulgare* are commonly called "oregano." The following references illustrate the usage of this common name for this species.

References:

Bailey, L.H. and E.Z. Bailey. 1976. Hortus Third. A Concise Dictionary of Plants Cultivated in the United States and Canada. Macmillan Publishing Company.

Bremness, L. and J. Norman. 1995. The Complete Book of Herbs and Spices. Penguin Books USA, Inc.

Kowalchick, C. and W.H. Hylton (ed.). 1987. Rodale's Illustrated Encyclopedia of Herbs. Rodale Press, Emmaus, Pennsylvania.

Sunset Western Garden Book. 1989. Lane Publishing Company. Menlo Park, California.

Wright, M. 1984. The Complete Handbook of Garden Plants. Rainbird Publishing Group, Ltd.

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Date of Proposal:

September 15, 2000

passed

Rule Change Proposal No. 3

Purpose: Addition of *Penstemon penlandii* to AOSA Handbook No. 25.

Present Rule: None.

Proposed Rule: AOSA Hbk. No. 25 - *Uniform Classification of Weed and Crop Seeds* (1999):
Classification Section (p. 93):

Penstemon penlandii (Scrophulariaceae) F,R W C W C W W W
---beardtongue, Penland's

Appendix A (p. A3):

beardtongue, Penland's =*Penstemon penlandii*

Appendix B (p. B37):

(Nomen #) (Scientific Name)

316014 *Penstemon penlandii* W.A. Weber

Supporting Evidence:

Penstemon penlandii was added to the AOSA Rules Table 1 (p. 52, 1999) and Table 3 (p. 81, 1998) in 1996; however, it was inadvertently left out of Handbook 25. This species is listed as endangered on the US Fish and Wildlife Endangered Species List. It is found naturally only in Colorado, in mountain-prairie regions. The primary usage for seed of this species would be for restoration purposes. In this proposal, *Penstemon penlandii* is classified in the same way that *Penstemon* spp. is already classified in Handbook 25, with the addition of "R" under "Spp. Class."

References:

University of Colorado at Boulder Government Publications Library. Threatened or Endangered Species in Colorado. <http://www.colorado.edu/libraries/govpubs/colonumb/species.htm>

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). [Online Database] National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/tax_search.pl?Penstemon+penlandii

USGS Northern Prairie Wildlife Research Center - Status of Listed Species and Recovery Plan Development. <http://www.npwrc.usgs.gov/resource/distr/others/recoprogram/states/species/penspenl.htm>

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Passed

Rule Change Proposal No. 4

Purpose: To correct the discrepancies in the common names listed in the AOSA Rules and Handbook No. 25 for *Saponaria ocymoides*.

Present Rule: AOSA *Rules for Testing Seeds* (1999) Table 3 (p. 87):

Saponaria ocymoides L.
saponaria

Proposed Rule: (AOSA Rules Table 3):

Saponaria ocymoides L.
rock saponaria

Supporting evidence:

Currently, the common names listed for *Saponaria ocymoides* in AOSA Handbook No 25 - *Uniform Classification of Weed and Crop Seeds* (p. 113-1999) are "saponaria, rock" and "soapwort." Changing the common name used in the AOSA Rules to "rock saponaria" would help to standardize the names used in both parts of the Rules. Several references listed below support the use of the name "rock saponaria" for *Saponaria ocymoides*.

References:

American Growers Association -growit.com:
<http://www.growit.com/Plants/Growers/SN/Index56.htm>

Fernlea Flowers Limited: <http://www.fernlea.com/perenn/variety/saponar.htm>

Mori Nurseries - MoriStar Perennials: <http://www.morinurseries.com>

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Date of Proposal:

September 15, 2000

Passed

Rule Change Proposal No. 5

Purpose: To change the "Additional Directions" listed in the AOSA Rules Table 3 for *Erodium cicutarium*, alfilaria, in order to include the "Hard seed" statement for this species.

Present Rule: AOSA Rules Table 3, p. 71

<i>Erodium cicutarium</i> alfilaria	B,T	20-30	3	14	Clip seeds.
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Proposed Rule: AOSA Rules Table 3, p. 71

<i>Erodium cicutarium</i> alfilaria	B,T	20-30	3	14	Hard seeds: see sec. 4.2d and 4.9k(6).
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Supporting Evidence:

Erodium cicutarium is a member of the Geraniaceae family, which is known to have hard seeds. Its close relative, *Pelargonium* spp., already has the "hard seed" statement in the Additional Directions column of Table 3 (p. 80 of AOSA Rules). In the AOSA Seedling Evaluation Handbook (p. 10), Geraniaceae is discussed along with Fabaceae, Convolvulaceae, and Malvaceae in Section 3.5.4, "Hard, swollen, dormant, and dead seeds."

Acceptance of this proposal would mean that hard seed would be reported in addition to germination when testing this species. The following germination data verifies the viability of the hard seed:

Erodium cicutarium Test Results from Ransom Seed Lab (tested according to AOSA Rules on top of blotters in 20-30C)

<u>Lab test number</u>	<u>% Germ</u>	<u>%Total Hard</u>	<u>%Viable Hard*</u>	<u>% Total Viable</u>	<u>Days in Test</u>
920923-07207 70		13	13	83	14
930617-02450 4		83	83	87	14
940209-00561 4		78	78	82	14
950413-01821 10		69	69	79	14
951031-07300 5		89	85	90	14
970521-02372 4		92	92	96	14
981028-08966 4		96	93	97	14
990813-07059 2		93	92	94	14

Erodium cicutarium mixture with *Erodium moschatum* (very similar species):

<u>Lab test number</u>	<u>% Germ</u>	<u>%Total Hard</u>	<u>%Viable Hard*</u>	<u>% Total Viable</u>	<u>Days in Test</u>
931227-06179 64	22	21	85	14	
940920-04608 2	83	83	85	14	
950607-02814 1	96	93	94	14	
961001-05891 10	85	83	93	14	
961001-05892 8	79	79	87	14	
980604-03297 5	82	80	85	14	
980721-05081 10	84	82	92	14	
980721-05082 8	71	70	78	14	

*Only viable hard seed was reported. Viability was determined by clipping the hard seed, placing it on media moistened with 400 ppm GA3, and chilling for 2 days and evaluating the seedlings or by using tetrazolium. As with most hard-seeded species, the immature seed can be hard and non-viable. In the test results listed above, the percentage of non-viable hard seed was very low.

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Reviewed by Sabry Elias

Date of Proposal:

September 26, 2000
Revised December 6, 2000

Passed

Rule Change Proposal No. 6

Purpose of Proposal:

To add common name(s) for species included in Handbook 25 without common name associations. These names would be added to the Classification Table and to Appendix A.

Present Rule, followed by Proposed Rule:

Present Rule	Proposed Common Name
<i>Agrostis exarata</i> var. <i>monolepis</i>	spike bentgrass awned spike bentgrass
<i>Althaea hirsuta</i>	rough marshmallow hairy marshmallow
<i>Apera interrupta</i>	dense silkybent
<i>Artemisia filifolia</i>	sand sage sand sagebrush
<i>Atriplex polycarpa</i>	cattle saltbush
<i>Atriplex subspicata</i>	saline saltbush
<i>Centaurea rothrockii</i>	Rothrock's knapweed
<i>Collomia linearis</i>	narrowleaf mountaintrumpet
<i>Crataegus douglasii</i>	black hawthorn
<i>Enteropogon acicularis</i>	curly windmill grass
<i>Glandularia bipinnatifida</i>	Dakota vervain
<i>Gypsophila pacifica</i>	Pacific baby's-breath
<i>Heterotheca grandiflora</i>	telegraphweed
<i>Hymenoxys richardsonii</i>	Colorado rubberweed
<i>Microstegium vimineum</i>	Japanese stiltgrass
<i>Nama hispida</i>	sand bells
<i>Oenothera coronopifolia</i>	crownleaf evening-primrose
<i>Panicum brachyanthum</i>	prairie panicgrass
<i>Petroselinum segetum</i>	corn parsley
<i>Physalis acutifolia</i>	sharpleaf groundcherry

<i>Plantago australis</i>	Mexican plantain
<i>Plantago coronopus</i>	crowfoot plantain
<i>Poa stenantha</i>	northern bluegrass
<i>Sisymbrium thellungi</i>	African turnipweed
<i>Spermacoce alata</i>	buttonplant
<i>Sphaeralcea parvifolia</i>	littleleaf globemallow
<i>Stachys arvensis</i>	field hedge-nettle staggerweed
[= <i>Trifolium tridentatum</i>]	tomcat clover
<i>Trifolium willdenovii</i> (note: scientific name correctly listed in classification table, but synonym was listed in Appendix A. Name will be updated in Appendix A to match classification table.)	

Supporting Evidence:

The common names listed below were among many suggested by AOSA Purity Subcommittee Common Name Working Group. Based on the suggestions submitted to the subcommittee chair as mailed survey of all the subcommittee members was conducted, the results compiled and presented at the AOSA/SCST Annual Meeting – Purity Subcommittee meeting in Ames, Iowa. Numbers of responses for each submitted common name were reviewed and final selections based on majority responses were approved by subcommittee members present at the meeting.

Scientific Name	Common Name	Reference No.
<i>Agrostis exarata</i> var. <i>monolepis</i>	spike bentgrass	12, 14
	awned spike bentgrass	3
<i>Althaea hirsuta</i>	rough marshmallow	11
	hairy marshmallow	12
<i>Apera interrupta</i>	dense silkybent	12, 14
<i>Artemisia filifolia</i>	sand sage	1, 18
	sand sagebrush	3, 5
<i>Atriplex polycarpa</i>	cattle saltbush	3, 12, 14
<i>Atriplex subspicata</i>	saline saltbush	5, 12, 14
<i>Centaurea rothrockii</i>	Rothrock's knapweed	12
<i>Collomia linearis</i>	narrowleaf mountain trumpet	5, 14
<i>Crataegus douglasii</i>	black hawthorn	5, 12
<i>Enteropogon acicularis</i>	curly windmill grass	6

Scientific Name	Common Name	Reference No.
<i>Glandularia bipinnatifida</i> [= <i>Verbena bipinnatifida</i>]	Dakota vervain	1, 2
<i>Gypsophila pacifica</i>	Pacific baby's-breath	8
<i>Heterotheca grandiflora</i>	telegraphweed	12, 14, 15
<i>Hymenoxys richardsonii</i>	Colorado rubberweed	5, 16
<i>Microstegium vimineum</i>	Japanese stiltgrass	13
<i>Nama hispida</i>	sand bells	10
<i>Oenothera coronopifolia</i>	crownleaf evening-primrose	5, 12
<i>Panicum brachyanthum</i>	prairie panicgrass	12
<i>Petroselinum segetum</i>	corn parsley	11, 17
<i>Physalis acutifolia</i>	sharpleaf groundcherry	12, 14
<i>Plantago australis</i>	Mexican plantain	12
<i>Plantago coronopus</i>	crowfoot plantain	3
<i>Poa stenantha</i>	northern bluegrass	12
<i>Sisymbrium thellungi</i>	African turnipweed	19, 20
<i>Sphaeralcea parvifolia</i>	littleleaf globemallow	4, 7
<i>Stachys arvensis</i>	field hedge-nettle	14
	staggerweed	12, 14
[= <i>Trifolium tridentatum</i>] <i>Trifolium willdenovii</i>	tomcat clover	3, 9, 12, 14

REFERENCES

1. Bailey, L.H. & E.Z. Bailey, 1976. Hortus Third: A concise Dictionary of Plants Cultivated in the United States and Canada. Macmillan Publishing Company.
2. Correll, D.S. and M.C. Johnston. 1979. Manual of the Vascular Plants of Texas. The University of Texas at Dallas.
3. Kelsey, H.P. and W.A. Dayton. 1942. Standardized Plant Names. 2nd ed. American Joint Committee of Horticultural Nomenclature. J. Horace McFarland Co., Harrisburg, PA.
4. Parker, K.F. 1972. An Illustrated Guide to Arizona Weeds. University of Arizona Press.
5. Checklist of the vascular plants of WYOMING (excluding grasses and their allies): <http://www.kmxq.com/hrbmoore/HOMEPAGE/Floras/WY.html>
6. Common Grasses of Central Australia - Curly Windmill Grass: <http://www.lpe.nt.gov.au/ADVIS/grass/CURLYWIND.HTM>
7. Green Acres Nursery - Herbaceous Perennials M-Z: <http://www.greenacresnursery.com/PernM-Z.html>

8. Mori Nurseries – MoriStar Perennials – Gypsophila pacifica:
<http://www.morinurseries.com/Perennials/Gypsophila1.html>
9. S & S Seeds – Plants Database Index by Scientific Name: <http://www.ss-seeds.com/sciname-a.html>
10. Sonoran Desert Wildflower Blooms – Arizona Sonora Desert Museum:
http://www.desertmuseum.org/exh_lcybloom.html
11. University of Exeter – Institute of Cornish Studies: CBRU Vascular Plant Check-list:
<http://www.ex.ac.uk/~cnfrench/ics/cbru/checklist/a1menu.html>
12. USDA Natural Resources Conservation Service. 1999. The PLANTS database:
http://plants.usda.gov/plants/cgi_bin/topics.cgi National Plant Data Center, Baton rouge, LA 70874-4490, USA.
13. Virginia Native Plant Society – Invasive Alien Plant Species of Virginia:
<http://www.rnps.org/invasive/FSMICROS.html>
14. CalFlora: a botanical resource for California on the internet: <http://elib.cs.berkeley.edu/calflora/>
15. California Native Plants from Las Pilitas: <http://www.laspilitas.com/plants/1147.htm>
16. Canadian Poisonous Plants Information System: <http://res.agr.ca/brd/poisonpl/ppnomen2.html>
17. Bradlaugh Fields Plant List: <http://www.wildlifetrust.org.uk/bcnp/brad/sfspp.htm>
18. National Plant Germplasm System/ Germplasm Resources Information Network: <http://www.ars-grin.gov/npgs>
19. Friend, E. 1983. Queensland Weed Seeds. Queensland Department of Primary Industries Miscellaneous Publication 81013. Queensland Department of Primary Industries, Brisbane, Australia.
20. Briggs, B.G., B.A. Barlow, H. Eichler, L. Pedley, J.H. Ross, D.E. Symon, & P.G. Wilson (eds.). 1982. Flora of Australia. Vol. 8, Lecythidales to Batales. Australian Government Publishing Service Canberra.

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Date: September 29, 2000, revised December 14, 2000

Passed

Rule Change Proposal No. 7

Purpose: Clarification of AOSA Handbook No. 25 as part of the AOSA Rules for Testing Seeds.

Present Rule:

10. UNIFORM CLASSIFICATION OF WEED AND CROP SEEDS

For classification of weed and crop seeds, refer to AOSA Handbook No. 25: *Uniform Classification of Weed and Crop Seeds, 1993*.

Proposed Rule:

10. UNIFORM CLASSIFICATION OF WEED AND CROP SEEDS

For classification of weed and crop seeds, refer to AOSA Handbook No. 25: *Uniform Classification of Weed and Crop Seeds, 1999* and subsequent updates. This entire handbook shall be considered part of the Rules and its use is required for determination of classification of the kind of seed under consideration and classification of weed and crop seed contaminants for purity testing.

Supporting Evidence:

Handbook 25, in its present format, was formally adopted by the AOSA membership in June 1993. The handbook has subsequently been updated, via adoption of numerous formal rule change proposals. It is therefore the opinion of the AOSA Purity Subcommittee and the AOSA Rules Committee (Effenberger, 1994) that Handbook 25 is, in fact, part of the AOSA Rules for Testing Seeds. The statement included in this proposal provides clarification for the required use of Handbook 25 for seed purity testing.

References

- Alvarez, S.E. 2000. Rule Change Proposal 20. The Seed Technologist Newsletter 74(1):110-116.
Atkins, B., J. Mari, and L. Ryder. 1996. Rule Change Proposals 3 – 4. AOSA News Letter 70(1):35-36.
Davidson, S. 1997. Rule Change Proposal 11. AOSA News Letter 71(1):66.
Effenberger, J. 1994. AOSA Rules Committee Report 1994. AOSA News Letter 68(3):39.
Galarza, A.R. 1999. Rule Change Proposals 4-7. The Seed Technologist Newsletter 73(1):84-87.
Guerke, W. 1997. Rule Change Proposal 10. AOSA News Letter 71(1):62-65.
Lair, J.N. and S.R. Maxon. 2000. Rule Change Proposal 21. The Seed Technologist Newsletter 74(1):117-119.
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Larsen, A.L. 1995. Rule Change Proposals 12 – 16. AOSA News Letter 69(1):30-34.
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Meyer, D. 1999. Rule Change Proposals 24-25. The Seed Technologist Newsletter 73(1):116-120.
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Prentice, L.J. 1996. AOSA General Session Minutes 1995. AOSA News Letter 70(1):23-24.
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Prentice, L.J. 1997. AOSA General Session Minutes 1997. AOSA News Letter 71(3):12A-12B.
Young, R. 1998. AOSA Rule Changes. The Seed Technologist Newsletter 72(3) 67-88.
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Date: September 29, 2000

Scientific/Common Name	Family	Spp. Class	Classification Contaminating						
			A	F	H	R	S	T	V
<i>Prosopis caldenia</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis calingastana</i>	Fabaceae	W	W	W	W	W	W	W	W
cusqui			W	W	W	W	W	W	W
<i>Prosopis campestris</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis castellanosii</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis denudans</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis elata</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis farcta</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis ferox</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis fiebrigii</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis hassleri</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis humilis</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis kuntzei</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis pallida</i>	Fabaceae	W	W	W	W	W	W	W	W
algarrobo			W	W	W	W	W	W	W
huarango			W	W	W	W	W	W	W
kiawe			W	W	W	W	W	W	W
<i>Prosopis palmeri</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis reptans</i> var. <i>reptans</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis rojasiana</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis ruizlealii</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis ruscifolia</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis sericantha</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Prosopis torquata</i>	Fabaceae	W	W	W	W	W	W	W	W
<i>Sagittaria sagittifolia</i>			W	W	W	W	W	W	W
arrowhead	Alismataceae	W	W	W	W	W	W	W	W
<i>Salvinia biloba</i>			W	W	W	W	W	W	W
salvinia, giant	Salviniaceae	W	W	W	W	W	W	W	W
<i>Salvinia herzogii</i>			W	W	W	W	W	W	W
salvinia, giant	Salviniaceae	W	W	W	W	W	W	W	W
<i>Sparganium erectum</i>			W	W	W	W	W	W	W
bur-reed, exotic	Sparganiaceae	W	W	W	W	W	W	W	W

Handbook 25 - Appendix A

aeginetia	= <i>Aeginetia</i> spp.
alectra	= <i>Alectra</i> spp.
algarrobo	= <i>Prosopis pallida</i>
amargo, mesquite	= <i>Prosopis articulata</i>
ambulia	= <i>Limnophia sessiliflora</i>
arrowhead	= <i>Sagittaria sagittifolia</i>
bur-reed, exotic	= <i>Sparganium erectum</i>
cusqui	= <i>Prosopis calingastana</i>
duck-lettuce	= <i>Ottelia alismoides</i>
Florida-elodea	= <i>Hydrilla verticillata</i>
hastate-leaf-pondweed	= <i>Monochoria hastate</i>
huarango	= <i>Prosopis pallida</i>
hydrilla	= <i>Hydrilla verticillata</i>
kiawe	= <i>Prosopis pallida</i>
melaleuca	= <i>Melaleuca quinquenervia</i>
Miramar-weed	= <i>Hygrophila polysperma</i>

monochoria	= <i>Monochoria hastate</i>
monochoria, arrow-leaf	= <i>Monochoria hastate</i>
monochoria, oval-leaf	= <i>Monochoria vaginalis</i>
morning-glory, swamp	= <i>Ipomoea aquatica</i>
no common name	= <i>Prosopis alpataco</i>
no common name	= <i>Prosopis argentina</i>
no common name	= <i>Prosopis burkartii</i>
no common name	= <i>Prosopis caldenia</i>
no common name	= <i>Prosopis campestris</i>
no common name	= <i>Prosopis castellanosii</i>
no common name	= <i>Prosopis denudans</i>
no common name	= <i>Prosopis elata</i>
no common name	= <i>Prosopis farcta</i>
no common name	= <i>Prosopis ferox</i>
no common name	= <i>Prosopis fiebrigii</i>
no common name	= <i>Prosopis hassleri</i>
no common name	= <i>Prosopis humilis</i>
no common name	= <i>Prosopis kuntzei</i>
no common name	= <i>Prosopis palmeri</i>
no common name	= <i>Prosopis reptans</i> var. <i>reptans</i>
no common name	= <i>Prosopis rojasiana</i>
no common name	= <i>Prosopis ruizlealii</i>
no common name	= <i>Prosopis ruscifolia</i>
no common name	= <i>Prosopis sericantha</i>
no common name	= <i>Prosopis torquata</i>
ottelia, water-plantain	= <i>Ottelia alismoides</i>
oval-leaf-pondweed	= <i>Monochoria vaginalis</i>
oxygen-weed	= <i>Lagarosiphon major</i>
paperbark, broadleaf	= <i>Melaleuca quinquenervia</i>
pickerel-weed	= <i>Monochoria vaginalis</i>
salvinia, giant	= <i>Salvinia herzogii</i>
salvinia, giant	= <i>Salvinia biloba</i>
swampweed, East Indian	= <i>Hygrophila polysperma</i>
teatree, broadleaf	= <i>Melaleuca quinquenervia</i>
teatree, paperbark	= <i>Melaleuca quinquenervia</i>
water-convolvulus	= <i>Ipomoea aquatica</i>
water-hyacinth	= <i>Eichhornia azurea</i>
water-hyacinth, anchored	= <i>Eichhornia azurea</i>
water-spinach, Chinese	= <i>Ipomoea aquatica</i>
water-thyme	= <i>Hydrilla verticillata</i>

Handbook 25 - Appendix B

Nomen #	Scientific Name
413715	<i>Aeginetia</i> spp.
413714	<i>Alectra</i> sp.
316411	<i>Eichhornia azurea</i> (Sw.) Kunth
316414	<i>Hydrilla verticillata</i> (L.f.) Royle
316380	<i>Hygrophila polysperma</i> (Roxb.) T. Anderson
20138	<i>Ipomoea aquatica</i> Forssk.
316415	<i>Lagarosiphon major</i> (Ridl.) Moss.
316416	<i>Limnophila sessiliflora</i> (Vahl) Blume
105723	<i>Melaleuca quinquenervia</i> (Cav.) S.T. Blake
316384	<i>Monochoria hastate</i> (L.) Solms
316385	<i>Monochoria vaginalis</i> (Burm. f.) C. Presl ex Kunth

Nomen #	Scientific Name
402901	<i>Ottelia alismoides</i> (L.) Pers.
316388	<i>Prosopis alpataco</i> Phil.
316389	<i>Prosopis argentina</i> Burkart
316390	<i>Prosopis articulata</i> S. Watson
316391	<i>Prosopis burkartii</i> Muñoz
316392	<i>Prosopis caldenia</i> Burkart
316393	<i>Prosopis calingastana</i> Burkart
29746	<i>Prosopis campestris</i> Griseb.
316394	<i>Prosopis castellanosi</i> Burkart
313262	<i>Prosopis denudans</i> Benth.
316395	<i>Prosopis elata</i> (Burkart) Burkart
100110	<i>Prosopis farcta</i> (Banks & Sol.) J.F. Macbr.
29754	<i>Prosopis ferox</i> Griseb.
316396	<i>Prosopis fiebrigii</i> Harms
316397	<i>Prosopis hassleri</i> Harms
316398	<i>Prosopis humilis</i> Gillies ex Hook. & Arn.
29762	<i>Prosopis kuntzei</i> Harms
313266	<i>Prosopis pallida</i> (Humb. & Bonpl. Ex Willd.) Kunth
316399	<i>Prosopis palmeri</i> S. Watson
316423	<i>Prosopis reptans</i> Benth. var. <i>reptans</i>
316401	<i>Prosopis rojasiana</i> Burkart
316402	<i>Prosopis ruizlealii</i> Burkart
316403	<i>Prosopis ruscifolia</i> Griseb.
29769	<i>Prosopis sericantha</i> Gillies ex Hook. & Arn.
316404	<i>Prosopis torquata</i> (Cav. ex Lag.) DC.
32648	<i>Sagittaria sagittifolia</i> L.
316406	<i>Salvinia biloba</i> Rabbi
316407	<i>Salvinia herzogii</i> de la Sota
316417	<i>Sparganium erectum</i> L.

Supporting Evidence:

In 2000 the USDA Agricultural Marketing Service (AMS) revised the Federal Seed Act (FSA) regulations to designate seeds of species listed in the Federal noxious Weed Act (FNWA) noxious and prohibited in shipments of agricultural and vegetable seeds. Forty-one of the species added to the FSA are not included in Handbook 25. This proposal will bring Handbook 25 in line with the USDA State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act (a.k.a. All-State Noxious Weed Seed List).

References

Farmer, J.E. 2000. USDA State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act. <http://www.ams.usda.gov/lsg/seed/lsg-sd.htm>

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network – (GRIN). [Online Database] National Germplasm Resources Laboratory, Beltsville, Maryland. www.ars-grin.gov/usr/local/apache/cgi-bin/npgs/html

Submitted by:

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Date: September 29, 2000

Passed

Rule Change Proposal No. 9

Purpose of Proposal

To correct the omission of *Erysimum hieraciifolium* L. from the classification table of the 1999 revision of Handbook 25.

Present Rule

Classification section:
None.

Appendix B:
315610 *Erysimum hieraciifolium* L.

Proposed Rule

Scientific /Common Name	Family	Spp. Class	Classification						
			contaminating						
			A	F	H	R	S	T	V
<i>Erysimum hieraciifolium</i> --wallflower	(Brassicaceae)	F	W	C	W	W	W	W	W

Appendix A:
wallflower = *Erysimum hieraciifolium*

Supporting Evidence

In the 1999 revision of Handbook 25 (Meyer & Wiersema 1999) *Erysimum hieraciifolium* appeared in Appendix B but was inadvertently omitted from the classification section of the handbook and Appendix A. This species was included in the classification table of the 1993 revision of the handbook (Larsen, et al. 1993). This proposal brings Handbook 25 and Table 3 of the Rules into alignment.

References

1. AOSA. 1999. Rules for Testing Seeds. Association of Official Seed Analysts, Lincoln, NE.
2. Larsen, A.L., J.H. Wiersema, and T. Handwerker. 1993. Uniform Classification of Weed and Crop Seeds. Contribution No. 25 to the Handbook on Seed Testing. Association of Official Seed Analysts, Lincoln, NE.
3. Meyer, D.J. and J.H. Wiersema (eds.) 1999. Uniform Classification of Weed and Crop Seeds. Contribution No. 25 to the Handbook on Seed Testing. Association of Official Seed Analysts, Lincoln, NE.
4. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). [Online Database] National Germplasm Resources Laboratory, Beltsville, Maryland. Available: www.ars-grin.gov/cgi-bin/npgs/html/

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Rule Change Proposal No. 10

Purpose of Proposal

Addition of minimum working weights for purity analysis, noxious weed seed and bulk examinations, and seed counts to Table 1 (Weights for Working Samples) for *Thymus vulgaris* L., common thyme.

Present Rule: New rule.

Proposed New Rule

Table 1. Weights for working samples

Kind of seed	Minimum weight for purity analysis ^a	Minimum weight for noxious-weed seed or bulk examination	Approximate number of seeds per gram ^b	Approximate number of seeds per ounce ^c
<i>Thymus vulgaris</i> L. fennel, common thyme	0.7	7	3,605	102,194

Supporting Evidence

Common thyme is a member of the Lamiaceae and as such the seed units are described under Sec.2.6f. Seed counts were conducted by the Purity Subcommittee following the procedure outlined in Appendix 4 of the AOSA rules. Please refer to the data below. The mean purity weight based on 7 samples tested was 0.7 grams. The noxious weed seed or bulk exam weight was calculated at ten times this value. By comparison the purity working weight in the ISTA Rules is 0.5 grams.

Lot #	Mean Wt. (gm) per 100 seed	Mean # Seed/gm	Mean # Seed/oz	Minimum Purity Working Wt. (gm)	Minimum Noxious Working Wt. (gm)
*1/8 reps of 100, **1/16 reps of 100					
17623**	0.032	3125	88594	0.8	8
5314**	0.027	3704	105008	0.7	7
4463**	0.027	3704	105008	0.7	7
85976**	0.029	3448	97751	0.7	7
389-20-W1*	0.023	4348	123266	0.6	6
389-20-W2*	0.03	3333	94491	0.8	8
940 1673**	0.028	3571	101238	0.7	7
Mean	0.028	3605	102194	0.7	7
Std. Dev.	0.003				

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Rule Change Proposal No. 11

Purpose: Eliminate the exclusion of woody species in the definition of Revegetation and Rangeland (R) in Handbook 25 to coincide with apparent application of "R" for species classification within the handbook.

Present Rule: Revegetation and Rangeland (R) - Species (except woody species) capable of establishing permanent vegetation to stabilize disturbed or denuded sites or permanent pasture on rangelands.

Proposed Rule: Revegetation and Rangeland (R) - Species capable of establishing permanent vegetation on rangelands, or to stabilize disturbed or denuded sites.

Supporting Evidence: A range is an extensive area of open land on which livestock wander and graze (Morris 1976). Rangeland is also an important feeding ground for wildlife. Range plants include grasses, grass-like plants, forbs and woody plants (Stubbendieck, et al. 1992; Belcher, 1985). The definition of revegetation and rangeland species in Handbook 25 excludes woody plants. When the species classification survey was conducted by the Handbook 25 Revision Committee (early 1990's under the direction of Dr. Arnold Larsen) to establish the species class of all plants included in the handbook, experts in seed testing, field biology, range management, etc. were consulted. While the following species are indeed "woody," most of them are found exclusively in rangeland plant communities and were consequently considered both shrub/trees and range/revegetation with obvious disregard to the exception for woody species. Rather than restricting these species to only the shrub/tree category, realigning the definition of the revegetation and rangeland category to more accurately describe the species compliment in this plant community may better serve the purpose of this handbook.

Amelanchier alnifolia - Saskatoon serviceberry
Amelanchier spp. - serviceberry
Amelanchier utahensis - Utah serviceberry
Amorpha canescens - leadplant
Amorpha fruticosa - indigobush or false-indigo
Artemisia cana - silver sagebrush
Artemisia ludoviciana - Louisiana sagewort
Artemisia nova - black sagebrush
Artemisia spinescens - bud sagebrush
Artemisia spp., sagebrush or wormwood
Artemisia tridentata - big sagebrush
Atriplex canescens - fourwing saltbrush
Atriplex confertifolia - shadscale saltbrush
Atriplex corrugata - saltbrush
Atriplex gardneri var. *gardneri* - Gardner saltbrush
Robinia hispida - bristly locust or rose-acacia
Atriplex gardneri var. *bonnevillensis* - Bonneville saltbrush

Atriplex lentiformis - quailbush
Atriplex polycarpa - no common name
Atriplex semibaccata - Australian saltbush
Chrysolepis chrysophylla - golden chinkapin
Chrysothamnus nauseosus - rubber rabbitbrush
Chrysothamnus spp. - golden aster
Chrysothamnus viscidiflorus - Douglas rabbitbrush
Ephedra nevadensis - Nevada ephedra or Nevada Mormon-tea
Ephedra viridis - green Mormon-tea
Fallugia paradoxa - Apache-plume
Krascheninnikovia lanata - winterfat
Lespedeza thunbergii - shrub or Thunberg's lespedeza
Purshia mexicana var. *mexicana* - cliff-rose or quininebush
Purshia mexicana var. *stansburiana* - Stansbury cliff-rose
Purshia tridentata - antelope bitterbrush
Yucca torreyi - Torrey yucca

References

Belcher, E. 1985. Handbook on Seeds of Browse-Shrubs and Forbs. USDA Technical Publication R8-TP8. Published by AOSA in cooperation with USDA Forest Service Southern Region. 246 pp.
Morris, W. (Ed). 1976. The American Heritage Dictionary of the English Language. Houghton Mifflin Co. 1550 pp.
Stubbendieck, J., S.L. Hatch, and C.H. Butterfield. 1992. North American Range Plants. 4th ed. U. of Nebraska Press. 493 pp.

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Date: September 29, 2000

Passed

Rule Change Proposal No. 12

Purpose: To add seed and working sample weights for *Matthiola incana* (common stock) to Table 1.

PRESENT RULE

New Rule Table 1. Weights for working samples.

PROPOSED RULE

Table 1. Weights for working sample of agricultural, vegetable and herb, flowers, and tree and shrub seeds.

Kind of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious weed seed or bulk examination (grams)	Approximate number of seeds per gram	Approximate number of seeds per ounce
<i>Matthiola incana</i> (L.) R. Brown common stocks	3	30	816	23,134

SUPPORTING EVIDENCE

Seed data obtained according to the AOSA seed weight determination method. (Appendix 4)

SUBMITTED BY

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DATE OF PROPOSAL

September 26, 2000

Species: <i>Matthiola incana</i> - stocks													
Lot No.	Variety	100 seed weight (grams)										SD	Var. Coeff.
		1	2	3	4	5	6	7	8	mean	variance		
A		0.1125	0.1152	0.1138	0.1127	0.1165	0.1153	0.1121	0.1187	0.1146	0.000005	0.0023	1.9838
B		0.0899	0.0931	0.0901	0.0915	0.0913	0.0898	0.0889	0.0945	0.0911	0.000004	0.0019	2.0619
C		0.1257	0.1258	0.1202	0.1238	0.1226	0.1239	0.1250	0.1253	0.1240	0.000004	0.0019	1.5315
D		0.0993	0.1029	0.1049	0.1011	0.1008	0.0993	0.0992	0.0990	0.1008	0.000005	0.0021	2.1079
P		0.1342	0.1313	0.1303	0.1319	0.1307	0.1337	0.1257	0.1278	0.1307	0.000008	0.0028	2.1760
I		0.1219	0.1274	0.1243	0.1226	0.1209	0.1287	0.1273	0.1222	0.1244	0.000009	0.0030	2.4015
J		0.1070	0.1069	0.1100	0.1076	0.1067	0.1090	0.1064	0.1082	0.1077	0.000002	0.0013	1.1666
K		0.1236	0.1241	0.1173	0.1205	0.1263	0.1210	0.1182	0.1194	0.1213	0.000010	0.0031	2.5710
L		0.1500	0.1543	0.1502	0.1503	0.1538	0.1500	0.1504	0.1473	0.1508	0.000005	0.0023	1.4945
M		0.1305	0.1283	0.1378	0.1323	0.1280	0.1288	0.1374	0.1354	0.1323	0.000017	0.0041	3.0747
N		0.1496	0.1466	0.1424	0.1400	0.1390	0.1444	0.1462	0.1465	0.1443	0.000013	0.0036	2.5119
O		0.1236	0.1330	0.1230	0.1339	0.1268	0.1303	0.1265	0.1345	0.1290	0.000021	0.0046	3.5680
									Mean	0.1226			

Passed

Rule Change Proposal No. 13

Purpose: To add seed and working sample weights to Table 1 for several species.

PRESENT RULE

New Rule Table 1. Weights for working samples.

PROPOSED RULE

Table 1. Weights for working sample of agricultural, vegetable and herb, flowers, and tree and shrub seeds.

Kind of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious weed seed or bulk examination (grams)	Approximate number of seeds per gram	Approximate number of seeds per ounce
<i>Antirrhinum</i> spp. L. snapdragon	0.4	4	6,993	198,252
<i>Catananche caerulea</i> L. Cupid's dart	8	80	308	8,732
<i>Centranthus ruber</i> (L.) DC. Jupiter's beard	5	50	549	15,564
<i>Cerastium tomentosum</i> L. snow-in-summer, cerastium	0.9	9	2,762	78,303
<i>Clarkia Bottae</i> (Spach) F.H. Lewis & M.E. Lewis godetia	0.5	5	4,785	135,655
<i>Clarkia unguiculata</i> Lindley clarkia	0.7	7	3,367	95,454
<i>Cleome hassleriana</i> Chodat cleome, spiderflower	5	50	496	14,062
<i>Dahlia</i> spp. dahlia	19	190	130	3,686
<i>Geum</i> spp. L. Geum	5	50	481	13,636
<i>Gomphrena globosa</i> L.	9	90	271	7,683

globe amaranth				
<i>Helichrysum</i> <i>bracteatum</i> (Ventenat) Andrews helichrysum, strawflower	1	10	1,761	49,924
<i>Helipterum roseum</i> (Hooker) Bentham helipterum	7	70	334	9,469
<i>Impatiens</i> <i>balsamina</i> L. balsam	22	220	112	3,175
<i>Ipomoea alba</i> L. moonflower	500	500	4	113
<i>Ipomoea x multifida</i> (Raf.) Shinn. cardinal climber, hearts and honey vine	65	500	39	1,106
<i>Ipomoea purpurea</i> (L.) Roth. common morning glory	54	500	46	1,304
<i>Ipomoea quamoclit</i> L. cypress vine	35	350	72	2,041
<i>Ipomoea tricolor</i> Cav. morning glory	85	500	29	822
<i>Kniphofia</i> spp. tritoma, torchlily	7	70	365	10,348
<i>Lablab purpureus</i> L. Sweet subsp. <i>purpureus</i> hyacinth-bean	500	500	3	85
<i>Lunaria annua</i> L. lunaria, honesty money plant	47	470	53	1,503
<i>Mirabilis jalapa</i> L. marvel-of-Peru, four-o'clock	210	500	12	340
<i>Nigella damascena</i> L. nigella	6	60	426	12,077
<i>Papaver orientale</i> L. Oriental poppy	0.7	7	3,497	99,140

<i>Pelargonium</i> spp.				
geranium				
cleaned seed	12	120	214	6,067
uncleaned seed	15	150	170	4,820
<i>Salvia coccinea</i> Juss.	3	30	717	20,327
Ex J. Murr.				
Texas sage				
<i>Stachys byzantina</i>	5	50	549	15,564
C. Koch				
lamb's ear				
<i>Tithonia rotundifolia</i>	25	250	100	2,835
(Miller) S.F. Blake				
torch flower, tithonia				

SUPPORTING EVIDENCE

Seed data obtained according to the AOSA seed weight determination method. (Appendix 4).

SUBMITTED BY

Staff of the New York State Seed Laboratory.

Donna Grubisic of the Ransom Seed Lab. contributed counts of *Helichrysum roseum*,
Impatiens balsamina, and *Mirabilis jalapa*

Contact: Ellen Chirco

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DATE OF PROPOSAL

September 26, 2000

Species: <i>Antirrhinum</i> spp. - snapdragon		100 seed weight (grams)										mean	variance	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8						
134		0.0116	0.0117	0.0109	0.0112	0.0113	0.0111	0.0117	0.0116	0.0114	0.000000	0.0003	2.6734		
8248		0.0129	0.0130	0.0132	0.0129	0.0135	0.0124	0.0126	0.0129	0.0129	0.000000	0.0003	2.6074		
7908		0.0116	0.0110	0.0109	0.0110	0.0111	0.0111	0.0107	0.0106	0.0110	0.000000	0.0003	2.7488		
6283		0.0114	0.0112	0.0110	0.0112	0.0118	0.0116	0.0118	0.0119	0.0115	0.000000	0.0003	2.9221		
10798		0.0115	0.0110	0.0116	0.0111	0.0113	0.0111	0.0109	0.0110	0.0112	0.000000	0.0003	2.2632		
11195		0.0105	0.0110	0.0111	0.0113	0.0112	0.0110	0.0110	0.0106	0.0110	0.000000	0.0003	2.5307		
7329		0.0141	0.0134	0.0135	0.0132	0.0133	0.0133	0.0132	0.0136	0.0135	0.000000	0.0003	2.2127		
6282		0.0121	0.0116	0.0117	0.0119	0.0119	0.0121	0.0122	0.0121	0.0120	0.000000	0.0002	1.7892		
7971		0.0144	0.0145	0.0144	0.0144	0.0145	0.0146	0.0144	0.0147	0.0145	0.000000	0.0001	0.7772		
10797		0.0243	0.0249	0.0240	0.0235	0.0238	0.0231	0.0237	0.0241	0.0239	0.000000	0.0005	2.2647		
10799		0.0104	0.0093	0.0095	0.0096	0.0098	0.0093	0.0095	0.0094	0.0096	0.000000	0.0004	3.7764		
6284		0.0228	0.0228	0.0216	0.0223	0.0231	0.0219	0.0225	0.0221	0.0224	0.000000	0.0005	2.2706		
6734		0.0172	0.0169	0.0160	0.0160	0.0162	0.0162	0.0161	0.0164	0.0164	0.000000	0.0004	2.7066		
6721		0.0189	0.0186	0.0184	0.0186	0.0190	0.0177	0.0188	0.0182	0.0185	0.000000	0.0004	2.2857		
6733		0.0126	0.0135	0.0127	0.0123	0.0125	0.0126	0.0121	0.0120	0.0125	0.000000	0.0005	3.6907		
6713		0.0161	0.0159	0.0164	0.0159	0.0160	0.0160	0.0157	0.0158	0.0160	0.000000	0.0002	1.3279		
										mean	0.0143				
Species: <i>Catananche caerulea</i> - Cupid's dart		100 seed weight (grams)													
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.		
6087		0.3372	0.3196	0.3219	0.3241	0.3289	0.3253	0.3218	0.3281	0.3259	0.000031	0.0056	1.7111		
6322		0.2815	0.2742	0.2789	0.2886	0.2782	0.2786	0.2818	0.2755	0.2797	0.000020	0.0045	1.5925		
6816		0.3672	0.3639	0.3587	0.3400	0.3609	0.3597	0.3640	0.3455	0.3575	0.000092	0.0096	2.6860		
1746		0.3035	0.3020	0.3096	0.3070	0.3007	0.3173	0.3087	0.3003	0.3061	0.000033	0.0058	1.8790		
6572		0.3079	0.3024	0.3038	0.3181	0.2967	0.3003	0.3032	0.3069	0.3049	0.000041	0.0064	2.0963		
7346		0.3099	0.3174	0.3206	0.3267	0.3359	0.3264	0.3260	0.3267	0.3237	0.000060	0.0077	2.3906		
5417		0.3001	0.3223	0.3076	0.3163	0.3256	0.3206	0.3363	0.3292	0.3198	0.000136	0.0117	3.6439		
5868		0.3217	0.3381	0.3135	0.3238	0.3323	0.3268	0.3313	0.3204	0.3260	0.000061	0.0078	2.3924		
5424		0.3030	0.3018	0.3114	0.3013	0.3104	0.3273	0.3185	0.3054	0.3099	0.000084	0.0092	2.9542		
7457		0.3623	0.3574	0.3596	0.3458	0.3300	0.3700	0.3551	0.3716	0.3565	0.000182	0.0135	3.7830		
7483		0.3714	0.3684	0.3530	0.3622	0.3648	0.3731	0.3611	0.3692	0.3654	0.000043	0.0066	1.7963		
										mean	0.3250				
Species: <i>Centranthus ruber</i> - Jupiter's beard		100 seed weight (grams)													
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.		
3181		0.1974	0.1952	0.1966	0.2024	0.1938	0.1980	0.1994	0.2020	0.1981	0.000009	0.0030	1.5387		
6086		0.1928	0.1917	0.1902	0.1891	0.1964	0.1937	0.1925	0.1918	0.1923	0.000005	0.0022	1.1515		
2468		0.1714	0.1652	0.1596	0.1660	0.1719	0.1651	0.1693	0.1629	0.1664	0.000018	0.0042	2.5436		
6085		0.1822	0.1699	0.1752	0.1708	0.1827	0.1779	0.1774	0.1805	0.1771	0.000024	0.0049	2.7401		
5884		0.1943	0.1906	0.1803	0.1866	0.1844	0.1839	0.1817	0.1882	0.1863	0.000022	0.0047	2.5077		
4634		0.1784	0.1698	0.1702	0.1859	0.1739	0.1810	0.1731	0.1697	0.1753	0.000036	0.0060	3.4023		
7201		0.1646	0.1561	0.1630	0.1649	0.1643	0.1656	0.1598	0.1587	0.1621	0.000012	0.0035	2.1473		
213		0.1927	0.1915	0.1979	0.1898	0.1980	0.1978	0.1909	0.1936	0.1940	0.000012	0.0034	1.7532		
6412		0.1925	0.1807	0.1844	0.1895	0.1954	0.1887	0.1873	0.1901	0.1886	0.000021	0.0046	2.4239		
340		0.1852	0.1916	0.1875	0.1909	0.1940	0.1813	0.1904	0.1893	0.1888	0.000016	0.0040	2.1283		
7562		0.1857	0.1858	0.1877	0.1910	0.1864	0.1971	0.1862	0.1886	0.1886	0.000015	0.0039	2.0604		
2645		0.1699	0.1734	0.1674	0.1682	0.1742	0.1743	0.1656	0.1687	0.1702	0.000011	0.0033	1.9660		
										mean	0.1823				

Species: <i>Dahlia</i> spp. - dahlia		100 seed weight (grams)										mean	variance	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.		
5708	Rigoletto	0.7291	0.7298	0.7354	0.7471	0.7484	0.7442	0.7554	0.7213	0.7388	0.000137	0.0117	1.5839		
183	Rigoletto	0.7117	0.7377	0.7415	0.7092	0.7324	0.7188	0.7169	0.7114	0.7225	0.000165	0.0128	1.7756		
145		0.7221	0.7237	0.7091	0.7123	0.7129	0.7209	0.7180	0.7313	0.7188	0.000052	0.0072	1.0078		
6512	Delight	0.8329	0.7936	0.7827	0.8023	0.7789	0.8045	0.8215	0.8101	0.8033	0.000339	0.0184	2.2905		
5651	Delight	0.8442	0.8413	0.8278	0.8263	0.7964	0.8170	0.8229	0.8104	0.8233	0.000246	0.0157	1.9039		
5850	Delight	0.7554	0.8008	0.8035	0.7524	0.7516	0.7587	0.8014	0.7593	0.7729	0.000585	0.0242	3.1289		
3507		0.7146	0.7334	0.7138	0.7197	0.7379	0.7093	0.7154	0.7192	0.7204	0.000100	0.0100	1.3907		
54	Rigoletto	0.7594	0.7492	0.7157	0.7575	0.7377	0.7563	0.7570	0.7446	0.7472	0.000218	0.0148	1.9768		
1222	Delight	0.7743	0.7885	0.7521	0.7998	0.8124	0.7978	0.7674	0.7692	0.7827	0.000408	0.0202	2.5823		
6856	Tall Silk Symphony	0.7300	0.7457	0.7641	0.7151	0.7078	0.7249	0.7050	0.6947	0.7234	0.000525	0.0229	3.1669		
bulk 10		0.8432	0.8573	0.8990	0.8670	0.8146	0.8852	0.8841	0.9032	0.8692	0.000904	0.0301	3.4585		
bulk 11		0.8985	0.8749	0.8290	0.8554	0.8759	0.8897	0.8617	0.8680	0.8691	0.000460	0.0214	2.4678		
7484		0.6627	0.6656	0.6898	0.6803	0.6717	0.6645	0.7225	0.6703	0.6784	0.000399	0.0200	2.9440		
7568		0.7570	0.7922	0.8032	0.7746	0.7560	0.8314	0.7939	0.7550	0.7829	0.000745	0.0273	3.4858		
										mean	0.7681				
Species: <i>Geum</i> spp. - geum		100 seed weight (grams)										mean	variance	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.		
254		0.2059	0.1902	0.1934	0.2024	0.1956	0.2014	0.2013	0.1869	0.1971	0.000044	0.0066	3.3715		
253		0.2385	0.2380	0.2379	0.2415	0.2262	0.2313	0.2360	0.2271	0.2346	0.000032	0.0057	2.4166		
7522		0.1825	0.1910	0.1918	0.1820	0.1979	0.1936	0.1950	0.1788	0.1891	0.000049	0.0070	3.7047		
7566		0.2071	0.2128	0.1955	0.1969	0.1998	0.2065	0.2063	0.2069	0.2040	0.000035	0.0059	2.9139		
6872		0.1881	0.1924	0.1809	0.1886	0.1854	0.1837	0.1930	0.1859	0.1873	0.000017	0.0041	2.2139		
6096		0.2355	0.2412	0.2346	0.2399	0.2352	0.2292	0.2290	0.2280	0.2341	0.000025	0.0050	2.1342		
bag a		0.2125	0.2146	0.2256	0.2174	0.2165	0.2183	0.2117	0.2133	0.2162	0.000020	0.0045	2.0622		
bag b		0.2174	0.2290	0.2062	0.2151	0.2123	0.2269	0.2154	0.2177	0.2175	0.000055	0.0074	3.4122		
6923		0.1920	0.1899	0.1936	0.1900	0.1824	0.1914	0.1896	0.1944	0.1904	0.000014	0.0037	1.9332		
										mean	0.2078				
Species: <i>Gomphrena globosa</i> - globe amaranth		100 seed weight (grams)										mean	variance	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.		
1904	Apricot	0.4263	0.4100	0.4186	0.4284	0.4299	0.4261	0.4417	0.4238	0.4256	0.000083	0.0091	2.1422		
1905	red	0.5444	0.5407	0.5308	0.5259	0.5332	0.5200	0.5405	0.5095	0.5306	0.000140	0.0118	2.2263		
1906	lilac	0.2809	0.2775	0.2885	0.2800	0.2823	0.2669	0.2772	0.2656	0.2774	0.000059	0.0077	2.7786		
1907	apricot	0.4275	0.4251	0.4359	0.4214	0.4167	0.4179	0.4236	0.4217	0.4237	0.000037	0.0061	1.4305		
1908	mix	0.2418	0.2448	0.2439	0.2418	0.2481	0.2411	0.2328	0.2410	0.2419	0.000019	0.0044	1.8162		
1909	mix	0.2411	0.2500	0.2406	0.2549	0.2399	0.2404	0.2412	0.2419	0.2438	0.000031	0.0056	2.2805		
1910	red	0.5323	0.5374	0.5420	0.5367	0.5372	0.5264	0.5224	0.5319	0.5333	0.000041	0.0064	1.2041		
1911	lilac	0.2778	0.2644	0.2782	0.2796	0.2725	0.2778	0.2759	0.2879	0.2768	0.000044	0.0066	2.3970		
1324	Red Embers	0.2204	0.2272	0.2176	0.2366	0.2183	0.2280	0.2304	0.2382	0.2271	0.000063	0.0079	3.4823		
1323	Lilac	0.2656	0.2761	0.2662	0.2551	0.2600	0.2567	0.2700	0.2720	0.2652	0.000056	0.0075	2.8164		
1035	Strawberry Fields	0.4653	0.4669	0.4688	0.4603	0.4813	0.4716	0.4685	0.4596	0.4678	0.000047	0.0069	1.4649		
1322	Aurea Superba	0.5260	0.5483	0.5394	0.5540	0.5263	0.5420	0.5339	0.5379	0.5385	0.000097	0.0098	1.8249		
1321	mix	0.2284	0.2371	0.2375	0.2394	0.2396	0.2475	0.2428	0.2389	0.2389	0.000029	0.0054	2.2672		
1320	mix	0.2248	0.2366	0.2314	0.2331	0.2409	0.2362	0.2299	0.2368	0.2337	0.000025	0.0050	2.1419		
										mean	0.3691				

Species:		<i>Helichrysum bracteatum</i> - helichrysum, strawflower											
		100 seed weight (grams)											
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff
1953	Moreska	0.0469	0.0489	0.0443	0.0465	0.0486	0.0486	0.0474	0.0487	0.0475	0.000002	0.0016	3.3228
1954	Moreska	0.0421	0.0415	0.0423	0.0424	0.0444	0.0429	0.0420	0.0427	0.0425	0.000001	0.0009	2.0376
1955	Pastel	0.0646	0.0639	0.0660	0.0660	0.0624	0.0637	0.0630	0.0633	0.0641	0.000002	0.0013	2.0767
1956	Silvery White	0.0659	0.0648	0.0637	0.0668	0.0704	0.0655	0.0677	0.0692	0.0668	0.000005	0.0023	3.3792
1957	Frosted Rose	0.0569	0.0549	0.0553	0.0564	0.0564	0.0559	0.0545	0.0540	0.0555	0.000001	0.0010	1.8487
1958	Frosted Rose	0.0579	0.0621	0.0581	0.0592	0.0590	0.0578	0.0594	0.0595	0.0591	0.000002	0.0014	2.3397
8561		0.0514	0.0540	0.0529	0.0511	0.0525	0.0539	0.0522	0.0532	0.0527	0.000001	0.0011	2.0228
4506		0.0626	0.0599	0.0600	0.0579	0.0589	0.0605	0.0625	0.0579	0.0600	0.000003	0.0018	3.0391
8240		0.0611	0.0587	0.0627	0.0597	0.0598	0.0615	0.0629	0.0617	0.0610	0.000002	0.0015	2.4522
8148		0.0531	0.0558	0.0534	0.0529	0.0550	0.0532	0.0555	0.0527	0.0540	0.000002	0.0013	2.3422
3450		0.0616	0.0668	0.0650	0.0643	0.0639	0.0630	0.0671	0.0636	0.0644	0.000003	0.0019	2.8812
3530		0.0549	0.0530	0.0535	0.0528	0.0538	0.0550	0.0540	0.0524	0.0537	0.000001	0.0009	1.7611
3141	cv. Monstrosum	0.0491	0.0500	0.0481	0.0480	0.0490	0.0457	0.0467	0.0474	0.0480	0.000002	0.0014	2.8992
A		0.0491	0.0522	0.0476	0.0500	0.0502	0.0500	0.0472	0.0521	0.0498	0.000003	0.0018	3.6692
4062	cv. Monstrosum	0.0659	0.0678	0.0692	0.0619	0.0680	0.0680	0.0646	0.0633	0.0661	0.000007	0.0026	3.9412
										mean	0.0568		
Species:		<i>Helipterum roseum</i> - helipterum											
		100 seed weight (grams)											
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff
2010		0.2945	0.2886	0.2940	0.2962	0.2810	0.2897	0.2839	0.2812	0.2886	0.000037	0.0061	2.1015
2011a		0.2784	0.2824	0.2951	0.2768	0.2938	0.2954	0.2986	0.2810	0.2877	0.000078	0.0089	3.0765
6408		0.2650	0.2792	0.2717	0.2618	0.2796	0.2769	0.2681	0.2804	0.2728	0.000052	0.0072	2.6532
5979		0.3215	0.3292	0.3299	0.3214	0.3151	0.3169	0.3246	0.3184	0.3221	0.000030	0.0055	1.6925
1433		0.3055	0.2898	0.2931	0.2753	0.3027	0.2935	0.2987	0.2948	0.2942	0.000086	0.0092	3.1441
2011b		0.2955	0.2983	0.2887	0.2947	0.2956	0.3038	0.2798	0.2850	0.2927	0.000060	0.0077	2.6356
2010		0.3073	0.3107	0.2903	0.2950	0.3153	0.3022	0.2956	0.2944	0.3014	0.000080	0.0090	2.9732
bulk		0.3104	0.3103	0.2892	0.2934	0.3135	0.2917	0.2884	0.3033	0.3000	0.000110	0.0105	3.4981
1435		0.2964	0.3097	0.3177	0.2855	0.3064	0.2990	0.2919	0.3040	0.3013	0.000106	0.0103	3.4124
5721		0.3423	0.3194	0.3192	0.3431	0.3476	0.3455	0.3235	0.3497	0.3363	0.000174	0.0132	3.9193
										mean	0.2997		
Species:		<i>Impatiens balsamina</i> - balsam											
		100 seed weight (grams)											
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff
0.9402		0.9537	0.9965	1.0252	0.9589	0.9873	0.9873	0.9223	0.9975	0.9786	0.001025	0.0320	3.2724
625	Camellia	0.9073	1.0042	0.8988	0.9094	0.8962	0.9344	0.9399	0.8990	0.9237	0.001331	0.0365	3.9495
3363		0.9306	1.0090	0.9570	0.9722	0.9525	0.9546	0.9502	0.9976	0.9655	0.000683	0.0261	2.7065
6269	Camellia	0.8079	0.7760	0.7781	0.7806	0.8291	0.8115	0.8110	0.8488	0.8054	0.000678	0.0260	3.2327
8123	mix	0.8203	0.8058	0.7660	0.7440	0.8102	0.7587	0.7841	0.7885	0.7847	0.000723	0.0269	3.4262
no #		0.9685	0.9222	0.8891	0.8831	0.8933	0.9089	0.9205	0.9676	0.9192	0.001110	0.0333	3.6247
5738	Camellia mix	0.9613	0.8893	0.9012	0.9648	0.9407	0.9272	0.9254	0.8763	0.9233	0.001049	0.0324	3.5077
7729	Camellia mix	0.7908	0.7294	0.7174	0.7572	0.7053	0.7624	0.7366	0.7283	0.7409	0.000764	0.0275	3.7302
45		0.8148	0.7924	0.8253	0.8662	0.7882	0.7894	0.8549	0.8413	0.8216	0.000936	0.0305	3.7236
11		1.0208	0.9669	0.9515	0.9621	0.9707	0.9523	0.9610	0.9944	0.9725	0.000562	0.0237	2.4386
134		1.0145	0.9901	1.0714	1.0740	1.0096	1.0122	1.0049	1.0153	1.0240	0.000968	0.0311	3.0377
3464		0.9483	0.9387	0.9154	0.8847	0.9122	0.9188	0.8928	0.9573	0.9210	0.000658	0.0255	2.7841
A		0.9055	0.9134	0.9376	0.9218	0.9232	0.9573	0.9067	0.9611	0.9283	0.000469	0.0215	2.3312
7556		0.7932	0.8518	0.8174	0.8120	0.8621	0.8765	0.8454	0.8823	0.8426	0.001030	0.0321	3.8082
										mean	0.8965		

Species: <i>Ipomoea tricolor</i> - morning glory		100 seed weight (grams)								mean	varaince	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8				
3147	Heavenly Blue	3.8636	3.8002	3.8049	3.8932	3.8457	3.8925	3.8257	3.8472	3.8466	0.001271	0.0357	0.9268
1359	Heavenly Blue	2.8859	2.6901	2.8048	2.7746	2.7727	2.8093	2.8012	2.7539	2.7868	0.003091	0.0556	1.9953
1360	Pearly Gate	3.6631	3.5476	3.6466	3.6496	3.6343	3.5929	3.6340	3.7193	3.6359	0.002521	0.0502	1.3810
1362	Flying Saucers	3.5529	3.6829	3.5878	3.6967	3.7000	3.5816	3.6436	3.6082	3.6317	0.003265	0.0571	1.5733
4256	blue	3.6844	3.5352	3.4943	3.7291	3.6527	3.4742	3.5286	3.5022	3.5751	0.009637	0.0982	2.7460
73		3.1685	3.1786	3.1358	3.1213	3.1005	3.1619	3.2261	3.2220	3.1643	0.002015	0.0449	1.4187
3516	Blue Star	3.4486	3.3935	3.4422	3.3760	3.4202	3.3757	3.4923	3.2777	3.4033	0.004164	0.0645	1.8962
6075	Blue Star	3.2340	3.2901	3.2138	3.2254	3.2599	3.2360	3.2414	3.1564	3.2321	0.001479	0.0385	1.1898
3379	Heavenly Blue	3.5275	3.3444	3.5076	3.4899	3.4450	3.4536	3.4109	3.4127	3.4490	0.003574	0.0598	1.7333
3404	blue	3.4104	3.3518	3.3403	3.4373	3.4243	3.4436	3.3953	3.3971	3.4000	0.001416	0.0376	1.1066
3401	blue	3.3124	3.2788	3.2248	3.2800	3.2843	3.3462	3.3688	3.2678	3.2979	0.001984	0.0445	1.3505
										mean	3.4020		
Species: <i>Kniphofia spp.</i> - tritoma, torchlily		100 seed weight (grams)								mean	variance	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8				
1336	Red Hot Poker	0.2691	0.2633	0.2588	0.2622	0.2784	0.2645	0.2532	0.2654	0.2644	0.000055	0.0074	2.7941
2557	Red hot Poker	0.2862	0.2863	0.2845	0.2824	0.2826	0.2911	0.2857	0.2785	0.2847	0.000014	0.0037	1.2937
2647		0.2791	0.2769	0.2885	0.2692	0.2710	0.2739	0.2743	0.2789	0.2765	0.000036	0.0080	2.1694
3812		0.2817	0.2755	0.2865	0.2834	0.2783	0.2808	0.2862	0.2797	0.2818	0.000018	0.0042	1.4947
6403		0.2990	0.2997	0.2837	0.2878	0.2769	0.2779	0.2756	0.2737	0.2843	0.000107	0.0103	3.6401
5051	bag	0.2752	0.2665	0.2643	0.2596	0.2663	0.2809	0.2578	0.2784	0.2686	0.000074	0.0086	3.1984
6108		0.2476	0.2570	0.2461	0.2403	0.2475	0.2279	0.2323	0.2466	0.2432	0.000087	0.0093	3.8376
7175		0.2730	0.2883	0.2702	0.2732	0.2738	0.2701	0.2794	0.2722	0.2750	0.000037	0.0061	2.2152
7570		0.2811	0.2802	0.2734	0.2783	0.2730	0.2796	0.2812	0.2754	0.2778	0.000011	0.0034	1.2159
259		0.2806	0.2733	0.2843	0.2912	0.2939	0.2722	0.2811	0.2789	0.2819	0.000059	0.0077	2.7330
		0.2777	0.2867	0.2770	0.2810	0.2752	0.2706	0.2710	0.2705	0.2762	0.000033	0.0057	2.0665
										mean	0.2740		
Species: <i>Lablab purpureus</i> - hyacinth bean		100 seed weight (grams)								mean	variance	sd	var. coeff.
Lot No.	Variety	1	2	3	4	5	6	7	8				
7601		24.9931	25.2929	25.4546	25.0059	25.6765	25.2997	25.1987	25.1050	25.2533	0.053889	0.2321	0.9192
3799		35.2755	35.5960	35.4086	34.5020	35.7264	35.0141	34.9002	35.6091	35.2537	0.176886	0.4206	1.1930
2629		34.0248	35.1773	33.8224	35.0150	34.8519	34.7259	34.1569	34.4888	34.5329	0.241854	0.4918	1.4241
5262		34.4288	33.7991	34.1045	34.0935	35.2117	35.2338	34.5438	34.3897	34.4756	0.267471	0.5172	1.5001
172		30.0175	29.5487	30.5900	29.6541	30.5687	29.7371	30.2132	29.9299	30.0324	0.158033	0.3975	1.3237
431		35.8976	35.9152	35.6568	36.1160	35.2981	35.3261	35.5568	33.7592	35.4407	0.544432	0.7379	2.0819
414		33.5860	34.6735	34.2194	36.2984	34.8256	34.8696	35.0010	34.3926	34.7333	0.606906	0.7790	2.2429
										mean	32.8174		

Species:		Stachys byzantina - lamb's ear											
		100 seed weight (grams)											
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.
8141 a		0.1852	0.1811	0.1866	0.1810	0.1801	0.1842	0.1880	0.1906	0.1846	0.000014	0.0037	2.0221
8141 b		0.1845	0.1837	0.1880	0.1753	0.1786	0.1854	0.1797	0.1848	0.1825	0.000018	0.0042	2.3088
1255		0.1939	0.1943	0.1957	0.1912	0.1930	0.1861	0.1871	0.1737	0.1894	0.000052	0.0072	3.8016
7180		0.1794	0.1787	0.1843	0.1793	0.1852	0.1886	0.1804	0.1811	0.1821	0.000012	0.0035	1.9388
6228		0.1879	0.1843	0.1849	0.1826	0.1822	0.1831	0.1833	0.1832	0.1839	0.000003	0.0018	0.9901
5669		0.1854	0.1784	0.1777	0.1832	0.1728	0.1784	0.1794	0.1805	0.1795	0.000014	0.0038	2.1065
1255		0.1811	0.1862	0.1801	0.1785	0.1826	0.1765	0.1844	0.1764	0.1807	0.000013	0.0036	1.9734
3815		0.1857	0.1838	0.1836	0.1781	0.1880	0.1867	0.1858	0.1814	0.1841	0.000010	0.0032	1.7300
6141		0.1857	0.1857	0.1840	0.1864	0.1828	0.1846	0.1849	0.1833	0.1847	0.000002	0.0013	0.6786
654		0.1840	0.1845	0.1817	0.1876	0.1812	0.1808	0.1750	0.1789	0.1817	0.000015	0.0038	2.0979
8219		0.1635	0.1716	0.1724	0.1756	0.1712	0.1771	0.1718	0.1728	0.1720	0.000016	0.0040	2.3345
										mean	0.1823		
Species:		Tithonia rotundifolia - torch flower, titonia											
		100 seed weight (grams)											
Lot No.	Variety	1	2	3	4	5	6	7	8	mean	variance	sd	var. coeff.
1330	Fiesta del sol	0.5874	0.5723	0.5719	0.5944	0.5796	0.5743	0.5928	0.5727	0.5807	0.000090	0.0095	1.6378
1930		1.0258	1.0651	1.0237	1.0264	1.0212	1.0290	1.0576	1.0496	1.0373	0.000300	0.0173	1.6699
1347		1.0952	1.0798	1.0995	1.0842	1.0559	1.0529	1.0944	1.0576	1.0774	0.000372	0.0193	1.7890
1348		1.0351	1.0207	1.0261	1.0455	1.0133	1.0324	1.0562	1.0281	1.0322	0.000186	0.0137	1.3227
1216		0.9475	0.9471	0.9526	0.9607	0.9388	0.9423	0.9827	0.9827	0.9568	0.000298	0.0173	1.8056
1346		1.0075	1.0497	1.0578	1.0183	1.0380	1.0191	1.0110	1.0109	1.0265	0.000374	0.0193	1.8835
3218		1.2154	1.1818	1.1221	1.2045	1.1804	1.1519	1.1343	1.1310	1.1652	0.001247	0.0353	3.0309
4251		1.0417	1.0624	1.0153	1.0769	1.0295	1.0206	1.0353	1.0368	1.0398	0.000428	0.0207	1.9893
4937		1.0750	1.0433	1.0172	1.0797	1.0644	1.0754	1.0897	1.0639	1.0636	0.000539	0.0232	2.1836
5701		0.9997	0.9465	0.9778	0.9748	0.9945	0.9874	0.9607	0.9474	0.9736	0.000416	0.0204	2.0959
5702		1.0739	1.0670	1.0679	1.0420	1.0558	1.0899	1.0728	1.0680	1.0672	0.000194	0.0139	1.3050
7046		0.9769	1.0060	0.9464	0.9580	0.9672	0.9560	0.9446	0.9484	0.9629	0.000423	0.0206	2.1359
3809		0.8898	0.8834	0.8561	0.9090	0.8770	0.9176	0.9032	0.8884	0.8906	0.000380	0.0195	2.1884
6238		1.0385	1.0735	1.0244	1.0451	1.0635	1.0230	1.0488	1.0723	1.0486	0.000394	0.0199	1.8932
1247		1.1128	1.1698	1.1206	1.1826	1.1424	1.1188	1.1763	1.1380	1.1452	0.000769	0.0277	2.4215
										mean	1.0045		