the NEWS LETTER

Volume 68, No. 2 May, 1994

of the ASSOCIATION OF OFFICIAL SEED ANALYSTS

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The

NEWS LETTER

of the

ASSOCIATION OF OFFICIAL SEED ANALYSTS, INC.

President:	Mr. James N. Lair Springfield, IL	Secretary:	Larry J. Prentice Lincoln, NE
Vice President:	Deborah Meyer Sacramento, CA	Editor:	Dr. Brent Turnipseed Brookings, SD

Table of Contents

1994 Meeting Program 1

Proposed Amendments to the AOSA Inc. Bylaws 11

Seed Abstracts 17

Reporting Dormancy in Seeds of Annual Grain Crops 23

The Influence of Scab (*Fusarium*) on Seed Germination 25

Ryegrass Varieties with Fluorescence Test Results 26

Computer Symposium Abstracts 27

Seed Storage Survey 31

Obituaries 44

Announcements 47

Book Review 53

Call for Research Proposals to Study Seed Germination and Dormancy 55

ISSN 0004-5764

71st ANNUAL MEETING
SOCIETY OF COMMERCIAL SEED TECHNOLOGISTS

84th ANNUAL MEETING
ASSOCIATION OF OFFICIAL SEED ANALYSTS

TENTATIVE PROGRAM
June 9 - 17 1994
Red Lion Inn, Columbia River
Portland, Oregon

Joint Program: Quentin Schultz, SCST & Deborah Meyer, AOSA
Research Program: Jan Ferguson, AOSA
Grass Seed Symposium: Sharon Lusk, SCST
Computer Symposium: Rodger Danielson, AOSA

Thursday June 9

8:00 am - 5:00 pm	SCST Executive Board Meeting
7:00 - 10:00 pm	SCST Executive Board Meeting

Friday June 10

8:00 am - 5:00 pm	Examination of RST Candidates
8:00 am - 5:00 pm	AOSA Executive Board Meeting
12:00 noon - 5:00 pm	Registration
5:00 - 8:00 pm	SCST Executive Board Meeting
7:00 - 10:00 pm	AOSA Executive Board Meeting

Saturday June 11

8:00 am - 5:00 pm	Registration
8:00 am - 5:00 pm	Exhibit Set-up
9:00 am - 4:00 pm	**GRASS SEED SYMPOSIUM**

Presiding: Sharon Lusk, RST, Agri Seed Testing

Breeding the Grasses	Virginia Lehman
Contracting with Farmers	Walter Bryant
Federal Seed Act	Susan Maxon

Crop Improvements - How They Work	Greg Lowry
Oregon Certification Program	Ron Cook
Cultural Practices	Jerry Mullen Ralph Fisher
Seed Control Officials	David Svik
Undesirable Grasses in Virginia	Dennis Brown
Consuming Company	Bob Roser
Exporting into the USA	CropMark Company
Broker	Orlin Reinbolt
Custom Cleaning	Wilco Farmers

Sunday June 12

7:00 am	Bean Buddy V Walk/Run
8:00 am - 5:00 pm	Registration
10:00 am - 5:00 pm	Exhibit / Coffee
10:00 am - 12:00 noon	AOSA Editorial Committee (executive)
10:00 am - 12:00 noon	AOSA Referee-SCST Research Committee (executive)
10:00 am - 12:00 noon	SCST Ethics Committee (executive)
12:00 noon	Lunch
1:30 pm	Portland City Tour
1:00 - 3:00 pm	SCST Editorial Committee (executive)
1:00 - 3:00 pm	AOSA Research Committee (executive)
1:00 - 3:00 pm	Committee of Affiliates (executive)
3:00 - 5:00 pm	AOSA Vigor Subcommittee (executive)
3:00 - 5:00 pm	AOSA Rules Committee (executive)
3:00 - 5:00 pm	AOSA Flower Seed Subcommittee (open)
4:00 - 5:00 pm	AOSA Tree and Shrub Working Group (open)

7:00 - 8:30 pm **AOSA/SCST JOINT OPENING SESSION**

Presiding: Mr. James Lair, AOSA President
Ms. Cathy Cook, SCST President

Call to Order
Invocation
Welcome: Dr. L.J. (Kelvin) Koong, Associate Dean
College of Agricultural Sciences
Oregon State University

Greetings:
Association of American Seed Control Officials
Association of Official Seed Certifying Agencies
American Seed Trade Association
Commercial Seed Analysts of Canada
International Seed Testing Association
National Association of State Departments of Agriculture

Preview of 1995 Annual Meeting

8:30 - 10:00 pm **AOSA/SCST PRESIDENTS' RECEPTION**

Monday June 13

7:00 SCST Breakfast

7:00 AOSA Past Presidents Breakfast

8:00 am - 5:00 pm Registration

8:00 am - 5:00 pm Exhibit/Coffee

8:30 am Columbia River Gorge Tour

8:30 am - 12:00 noon **RESEARCH PAPERS / GRADUATE STUDENT COMPETITION**
Presiding: Dr. Jan Ferguson
North Carolina State University

8:30 am Variation and Release of Dormancy in Red Rice Genotypes. K. Paquiot and J.C. Delouche*. Mississippi State University.

8:45 am Comparison of TZ Staining Patterns in Non-Weathered and Weathered Sorghum Seed. A.S. Goggi*, C.H. Andrews, C.E. Vaughan, and L.M. Gourley. Iowa State University and Mississippi State University.

9:00 am Seed Quality of Preharvest-Sprouted Wheat. N.R. Foster*, L.A. Burchett, G.M. Paulsen. Kansas State University.

9:15 am A Method for Estimating Reduction in Stand Caused by Sprouted Wheat Seed. T.G. Chastain*, K.H. Ward, B.L. Klepper, and D.E. Wilkins. Oregon State University and USDA-ARS.

9:30 am Effects of Calcium Nutrition on Soybean Seed Quality. M.G. Burton*, M.B. McDonald, M.J. Lauer, M.L. Evans. Ohio State University.

9:45 am Effect of Baytan 30 Seed Treatment on Potential Maximum Coleoptile Length and Its Impact of Stand Establishment. S.C. Shen. Gustafson, Inc.

10:00 am Development of Priming Techniques for Kentucky Bluegrass Seed. J. Tanaka. Oregon State University.

10:15 am Break

10:30 am SCST Presidential Address

10:45 am AOSA Presidential Address

11:00 am Moisture Exchange and Equilibria in Soybean Seed Blends. Marwanto, E.R. Cabrera and J.C. Delouche*. Mississippi State University.

11:15 am Random Amplified Polymorphic DNA (RAPD) from Seeds Used in Cultivar Purity Determinations. M.B. McDonald*, L.J. Elliott, and P.M. Sweeney. Ohio State University.

11:30 am Identification of Grass Cultivars by Isoelectric Focussing of Seed Proteins. K. Forster*, H. Hahn, M. Tornow, W. Schoberlein. Martin-Luther-University Halle-Wittenberg, Germany.

11:45 am Effect of Seed Vigor on Pod Yield (Fresh Weight) in Field Grown Garden Bean. D.M. TeKrony* and M. Rucker. University of Kentucky.

10:20 am - 12:00 noon SCST International (executive)

11:00 am - 12:00 noon AOSA Constitution Committee (executive)

12:00 noon Lunch

1:00 - 2:00 pm **SPECIAL PRESENTATION**
National Seed Health Board (open)

2:00 - 4:00 pm **JOINT AOSA REFEREE - SCST RESEARCH COMMITTEE REPORTS**
AOSA Referee Committee Chair: Deborah Meyer
SCST Research Committee Chair: Nancy Vivrette

Region I - Northwest

Cold Test of Wheat
James D. Maquire, Seed Technology Laboratory, Washington State University

Safflower Germination: Substrate Comparison
Nancy Vivrette, Ransom Seed Laboratory

Region II - Midwest

Pure Seed Determination: Half Seed Rule
Kathleen Willey, Arizona State Seed Lab

Region III Northeast

Germination Test on Seedless Watermelon
Ellen Chirco, New York State Ag. Exp. Station

Region IV - Southwest

Classification of Lolium Sterile Florets
Dixie Ogle, Texas Dept. of Agriculture

Common Weed Seed Identification
Jane Hall, ASCO Seed Laboratory

Region V - Southern

Germination of Centipedegrass Using GA3
Wayne Guerke, Georgia Dept. of Agriculture

Purity Analysis on Soybean Samples and Hypocotyl Color Pigmentation
Jean Tolliver, Delta & Pineland Co.

Region VI - Canada

Lettuce and Barley Germination
Virginia Hildebrant, Stokes Seeds

Elytrigia repens Retrieval and Identification
Jim Sheppard, Agriculture Canada

Regional Planning Session for 1994-95 Referee Projects

4:00 - 5:00 pm	Lettuce Seedling Evaluation Working Group (open)
4:00 - 5:00 pm	Steering Committee for 1995 Meeting (executive)
4:00 - 5:00 pm	AOSA Standardization Committee (executive)
6:00 - 7:00 pm	AOSA Purity Subcommittee (open)
6:00 - 7:00 pm	AOSA Seed Conditioning Subcommittee (open)
6:00 - 8:00 pm	AOSA Vigor Subcommittee (open)
7:00 - 8:00 pm	AOSA Rangegrass Subcommittee (open)
8:00 - 9:00 pm	AOSA TZ & Biological Measures Subcommittee (open)
8:00 - 9:00 pm	AOSA Garden Bean Subcommittee (executive)

Tuesday June 14

8:00 - 11:00 am	Registration
8:00 - 11:00 am	Exhibit / Coffee
8:00 - 10:00 am	AOSA Ethics Committee (executive)
8:00 - 10:00 am	AOSA Garden Been Subcommittee (open)
8:00 - 10:00 am	AOSA Germination & Dormancy Subcommittee (open)
10:00 - 10:30 am	AOSA Standardization Committee (open)
10:30 - 11:00 am	Photo Session
11:00 am - 10:00 pm	**WILLAMETTE VALLEY AGRICULTURAL TOUR**

Wednesday June 15

8:00 am - 5:00 pm	Registration
8:00 am - 5:00 pm	Exhibit / Coffee
8:00 - 9:30 am	**AOSA/SCST COMPUTER SYMPOSIUM**
	Introduction Rodger Danielson, Oregon State University
	Use of Computers by Seed Samplers Larry Nees/Robert Geiger, Indiana Seed Lab
	Computers in the Traditional Seed Lab Robert Miles, Revolution Software, Corvallis, Oregon Gene Dade, Eugene Dade & Associates, Salem, Oregon
	Computerization of Seed Herbarium Data & Nomenclature Don Russ, Paragon Systems, Rickreall, Oregon
	An Expert System for Identification Richard Old, XID Services, Pullman Washington
	Computers as Training Tools Jim Sheppard, Agriculture Canada, Ottawa, Ontario
9:30 am - 4:00 pm	Computer Demonstrations
10:00 am - 12:00 noon	AOSA Seed Testing Standardization Research Funding Subcommittee (executive)
10:00 am - 12:00 noon	SCST Ethics Committee (open)

10:00 am - 12:00 noon	Corn Isozyme Working Group (open)
12:00 noon	Lunch
1:00 - 2:00 pm	AOSA Constitution Committee (open)
2:00 - 5:00 pm	AOSA Executive Board Meeting
1:00 - 5:00 pm	**SCST GENERAL BUSINESS MEETING**

Call to Order	Cathy Cook
Invocation	Cathy Breadner
Appointment of Sergeant of Arms	Cathy Cook
Roll Call	Cathy Weidmaier
Necrology Report	Janet Paisley
Minutes of Mid-Winter Executive Board Meeting	Cathy Weidmaier
Minutes of the June 1994 Executive Board Meeting	Cathy Weidmaier
Report of Secretary	Cathy Weidmaier
Report of Treasurer	Cathy Weidmaier

Standing Committee Reports

Membership	Mary Ann Trowbridge
Legislative	Nancy Dione
Public Service	DaNell Jamieson
Historian	Janet Paisley
Research	Nancy Vivrette

Special Committee Reports

Library	Louise Taylor
Computer	Leslie Sinning
Ethics	Pat Brownfield
National Seed Health Board Committee	Travis Handwerker

Special Representatives Reports

Meeting Place Committee	Cathy Weidmaier
AOSA Rules Committee	David Carrillo
AOSA Seed Standardization Committee	Mike O'Neal
AASCO Wildflower Labelling Committee	Aleta Meyr
AASCO Labelling and Legislative Review	Stan Grote
AOSA Ethics/QA Resources	Travis Handwerker

Regional Reports

Commercial Seed Analysts Association of Canada	Cathy Breadner
California Seed Analysts and Seed Researchers	John Warner
Front Range Seed Analysts	Barbara Atkins
Idaho Seed Analysts Assoc.	Brenda Watts

	Illinois Seed Technologists	Stewart Oliver
	Missouri Seed Technologists	Floyd Wiesner
	Northeast Seed Technologists	No Report
	Oregon Seed Technologists	Linda Jackson
	Seed Analysts of Iowa	Diane Mesa
	Seed Analysts of the Midwest	Paul Mickelson
	ASTA Seed Analysts Liaison Committee	Alan Galbreth
	Audit Committee Report	TBA
	Resolution Committee Report	TBA
	Old Business	
	New Business	
	Nominating Committee Report	Paul Johnson
	Announcements	
	Adjournment	
	Special Presentation: SCST International	Quentin Schultz
6:00 pm	**AOSA/SCST SOCIAL HOUR**	
7:00 pm	**AOSA/SCST BANQUET**	

Thursday June 16

8:00 am - 12:00 noon	Exhibit / Coffee	
8:00 am - 12:00 noon	Computer Demonstrations	
8:30 am	Mt. St. Helens Tour	
8:00 - 10:00 am	SCST Executive Board	
8:00 - 9:00 am	AOSA/SCST Computer Committee (open)	
9:00 - 11:00 am	AOSA Rules Committee (open)	
11:00 am - 12:00 noon	AOSA Ethics Committee (open)	
12:00 noon	Lunch	
1:00 - 5:00 pm	**AOSA GENERAL BUSINESS MEETING**	
	Call to Order	Jim Lair
	Roll Call	Larry Prentice
	Executive Board Report	Larry Prentice
	Secretary's Report	Larry Prentice
	Treasurer's Report	Larry Prentice
	<u>Standing Committee Reports</u>	
	Editorial	Susan Maxon
	Legislative	Malcom Sarna
	Liaison	Dick Lawson
	Membership	Larry Nees

Public Service & Archives	Larry Prentice
Referee	Deborah Meyer
Research	Robert Karrfalt
Rules	Jim Effenberger
Seed Standardization	Rodger Danielson

Special Committee Reports

Affiliate Organizations	Jim Lair
AOSA/ISTA Harmonization	Loren Wiesner
AOSCA Advisory	Dick Lawson
Audit	TBA
Budget	Deborah Meyer
CAST	Dan Niffenegger
Certification of Analysts	Wayne Guerke
Computer Utilization	Steve McGuire
Constitution	Ellen Chirco
CuSO4 Sweetclover Testing	Richard Payne
Ethics/Q.A. Resources	Kathleen Willey
Meeting Place	Larry Nees
Merit Award	Jim Lair
Necrology	Dan Niffenegger
Nomenclature	John Wiersema
Program	Deborah Meyer
Resolutions	TBA
Symposium	Rodger Danielson

8:00 - 10:00 pm **Hoffman Manufacturing Company Hospitality Room**

Friday June 17

7:30 am - 10:00 pm Post Convention Tour - Oregon Coast

SCST Seed Symposium

June 11, 1994
Red Lion Inn, Columbia River
in conjunction with AOSA/SCST annual meeting
Tentative schedule as of April 20, 1994

9:00	Sharon Lusk	Agri Seed Testing, Inc.	Introduction
9:05	Dr. Virginia Lehman	Lofts/Great Western	Breeding the grasses
9:40	Jerry Mullen	Mullen Farms	Grower perspective and
9:55	Ralph Fisher	Ralph Fisher Farms	Cultural practices
10:10	Dean Blades	Wilco Farmers	Custom Cleaning
10:30	Coffee Break		
11:00	Walter Bryant	Roberts Seed	Contracting w/ Growers and Consuming Companies
11:30	Orlin Reinbolt	Seed Trader	Importance of a Test to a Grass Seed Trade Transaction
12:00	Lunch		
1:00	Ron Cook	Oregon Seed Certification	Certified Seed Requirements
1:20	Greg Lowery	Idaho Crop Improvement	AOSCA, NGVRB
2:20	David Svik	Nebraska State Seed Lab	AASCO, RUSSL
2:45	Dennis Brown	Virginia State Seed Lab	UGS, Regulatory w/grasses
3:00	Coffee Break		
3:30	Gary Smith	USDA	APHIS
3:45	Susan Maxson	Federal Seed Lab	Federal Seed Act
4:00	Questions and Answers, Discussion on related topics, How could we better work together?		
5:00	close		

There will be various displays to look at during the coffee breaks. Lunch is provided with registration fee for symposium. Everyone is invited.

TO: Official Laboratories of AOSA

FROM: Ellen M. Chirco, Chairman, Bylaws Committee

SUBJECT: Proposed amendments to the AOSA Inc. Bylaws

Listed below are three proposals for your immediate attention. See the AOSA News Letter September 1993, Vol. 67. No 3 pp. 93-105 for the current Bylaws.

Proposal 1) Article IV (4) membership @ Official Laboratories (see attachment from AOSA Membership Committee).

Proposal 2) Article V - Officers and Executive Board.
A new section has been added:
4) Filling Office Vacancies:
Note: This should not require a membership vote for it is a clarification of the already existing procedures for filling vacancies.

Proposal 3) Article VI Election of Officers and Executive Board Members

Section (3) does not take into account the situation of having only one candidate to run for an elective office. The following changes have been proposed.

Line 7 "The ballots for the election of Vice-President and Secretary-Treasurer shall include ~~at least two, but~~ no more than the three, top available candidates for each office, except in the case of a tie vote." If there is only one candidate for a position that candidate shall run against an open write-in slot." Ballots for the election of the elective Executive Board members shall include, if possible, at least twice as many candidates as there are vacancies."

If you have any questions or concerns about these proposals please contact me before the meeting.

AOSA Bylaws Committee
Jim Lair, Larry Nees, Dick Payne, Larry Prentice, Dave Svik, Jim Warren

PROPOSAL TO AMEND AOSA BYLAWS

"ARTICLE IV (4)- MEMBERSHIP" (a): Official Laboratories

PRESENT WORDING:

ARTICLE IV, SECTION 4(a):

Official Laboratories - seed laboratories of government regulatory agencies and/or government institutions as defined in Article IV Section 2, engaged in seed testing and/or seed research shall be eligible for Official laboratory status. Each Official Laboratory shall be entitled to one vote in the election of officers and other business of the Association. The vote of an Official Laboratory shall be cast by one of the Affiliate members.

PROPOSED AMENDMENT:

ARTICLE IV, SECTION 4(a):

Official Laboratories - seed laboratories of government agencies or institutions as defined in Article IV Section 2 engaged in seed testing, which have been designated by law as the official seed testing laboratory for that state, province, or federal government, shall be eligible for "Official" laboratory status. Each state shall be limited to one official member laboratory, provided that all Official Laboratory members as of January 1, 1994 may retain their official membership. Each Official Laboratory shall be entitled to one vote in the election of officers and other business of the Association. The vote of an Official Laboratory shall be cast by one of the Affiliate members.

SUPPORTING ARGUMENTS:

It is the intent of the Membership Committee to more clearly define the category of "Official Laboratory" membership in the Association, as laboratories which are identified by state, provincial of federal law as the "official" laboratory for that state, province, or federal government. The primary responsibility of such laboratories would be regulatory testing in support of state or federal seed legislation.

SUBMITTED BY:

AOSA Membership Committee
L. Nees, *Chairman*, M. Sarna, T. Umstattd, M. Hafdahl, R. Bradley, G. Moore, J. Warren

ASSOCIATION OF OFFICIAL SEED ANALYSTS INC.

BYLAWS

ARTICLE V - OFFICERS AND EXECUTIVE BOARD

1. The officers of the Association shall consist of:

   a) President
   b) Vice-President
   c) Secretary-Treasurer

2. The Executive Board shall consist of:

   a) President
   b) Vice-President
   c) Secretary-Treasurer
   d) Immediate Past President
   e) Chairman of the Editorial Committee
   f) Six members elected by the Association

3. Duties and Terms of Office:

   a) President and Vice-President:

      1. President: It shall be the duty of the President to preside at meetings of the Association, to perform the usual duties of such office, and in addition:

         (a) Serve as chairman of the Executive Board;

         (b) Appoint all committee chairmen;

         (c) Approve appointment of committee members;

         (d) Serve as chairman of the Merit Award Committee;

         (e) Serve as advisor to the Program Committee;

         (f) Serve as chairman of the Budget Committee during the first year of office and as advisor to the chairman of the Budget Committee during the second year of office.

         (g) Review reports on all committee activity during term of office.

      2. Vice President: The Vice-President shall act as President upon the completion of the term of office as Vice-President, except that, in the case of ineligibility or resignation, the vacancy shall be filled as provided in Article V, Section 4 (b) or (c), of the Bylaws. The duties of the Vice-President shall include:

         (a) Serve as chairman of The Program Committee.

         b) Serve as member of Merit Award Committee.

         (c) During the close of the second year of office as Vice-President in preparation for the first year of office as President, appoint all chairmen for those committees whose chair positions must be filled annually and for those whose chair positions have been vacated by term expiration as specified in the Bylaws.

(d) Serve as member of the Budget Committee during the first year as Vice-President. During the second year of office, the Vice-President shall serve as chairman of the Budget Committee in preparation for the first year of office as President.

3. The terms of office of the President and Vice-President shall be for two years beginning at the close of the annual meeting presided over by the previous President or Acting President and ending at the close of the annual meeting concluding the second year of that term of office or until successors have been installed. The Vice-President shall automatically become President upon completion of his term as Vice-President or, at the close of the Annual Meeting which he served as Acting President. Serving as Acting President during his term as Vice-President shall not affect his elevation to the Presidency. Serving as Acting Vice-President shall not affect one being elected to a two year term as Vice-President.

b) Secretary-Treasurer:

1. The Secretary-Treasurer shall perform the duties common to that office in all organizations, and, in addition, shall receive all moneys for dues or from other sources; and acknowledge receipt of the same. He shall deposit to the credit of the Association in a recognized bank all moneys received, and pay out therefrom such accounts as are approved by the Executive Board, send out to the member laboratories and receive nomination forms, and shall also prepare and send out ballots. The Secretary-Treasurer shall be bonded; the amount to be decided by the Executive Board.

2. The term of office of the Secretary-Treasurer shall be for three years and an incumbent may succeed himself if re-elected.

c) Executive Board:

1. The Executive Board shall have the following general responsibilities:

   (a) Conduct the business of the Association when the Association is not in session.
   (b) Consider matters of policy and make recommendations to the Association concerning such matters.
   (c) Act upon matters referred to it for decision or recommendation by the Association membership at an Annual Meeting.

2. The Executive Board shall have full responsibility at all times for the following specific duties.

   (a) Make financial arrangements for the publication and distribution on the Journal of Seed Technology, News Letter, Handbook of Seed Testing, and other publications of the Association.
   (b) In consultation with appropriate officers of the Society of Commercial Seed Technologists, set the time and place of Annual Meetings.
   (c) Approve special meetings of the Association or the Executive Board when the need for such has been determined to exist.
   (d) Decide elections in case of tie votes.
   (e) Approve tentative rules for testing seeds.
   (f) Approve minutes of Annual Meetings prior to publication.
   (g) Provide for the bonding of the Secretary-Treasurer.
   (h) Approve disbursements from Association funds.
   (i) Report all actions to the Association membership at each Annual Meeting.

3. The term of office of the elective Executive Board Members shall be for three years. A member may serve for two consecutive terms after which one year must elapse to establish eligibility for re-election.

4. Filling Office Vacancies: At the time of each annual election all existing vacancies in the elective offices will be filled by persons elected in the manner prescribed by Article VI Section 3.

   a) President - Should a vacancy occur in the Presidency, the Vice-President shall relinquish his office and become Acting President until the close of the next annual meeting whereupon he shall become President.

   b) Vice-President - Should a vacancy occur in the Vice-Presidency, the Executive Board shall elect one of its members to serve as Vice-President until the next annual election at which time a Vice-President shall be elected.

   c) Both President and Vice-President - Should a vacancy occur in both the Presidency and Vice-Presidency, the Executive Board lead by the Secretary-Treasurer shall elect one of its members to serve as Acting President, and another to serve as Acting Vice-President until the next annual election at which time a President and Vice-President will be elected.

   d) Secretary-Treasurer - A vacancy occurring in the office of Secretary-Treasurer may be filled until the next election by a person appointed by the President or Acting President. A new Secretary-Treasurer will be elected for a full three-year term at the next annual election.

   e) Executive Board - At the first annual election after this provision takes effect, two members of the Executive Board shall be elected for three-year terms, two for two-year terms and two for one-year terms. At each annual election thereafter, two members shall be elected for three-year terms. A vacancy occurring prior to the completion of a term of office may be filled until the next election by a person appointed by the President or Acting President. At the next annual election, the membership of the Association shall elect one of its Affiliate members to serve out the unexpired term.

ARTICLE VI- ELECTION OF OFFICERS AND EXECUTIVE BOARD MEMBERS

1. Eligible to vote:

   a) Official laboratories of the Association as set forth in Article IV- MEMBERSHIP Section 4 (a) of the Bylaws shall be eligible to cast one vote by an Affiliate Member of the laboratory staff.

   b) The President shall have the right to vote on all questions, but in case of a tie, the motion shall be declared lost.

2. Officers and the elective Executive Board Members shall be elected by ballot. The ballot shall be prepared by the Nominations Committee and submitted to the members by the Secretary-Treasurer. The method of voting shall be as set forth in Section 3.

3. At least three months prior to the Annual Meeting, the Secretary-Treasurer shall send nomination forms to member laboratories for use in nominating candidates to fill vacancies on the Executive Board. The nomination form for elective board members shall call for the nomination of as many candidates as there are vacancies. Nominations shall be submitted on these forms, at least two months before the Annual Meeting, to the chairman of the Nominations Committee who will determine the availability for office of the nominees. The Secretary-Treasurer will then prepare ballots as instructed by the chairman of the Nominations Committee and forward them to member laboratories. The ballots for the election of Vice-President and Secretary-Treasurer shall include ~~at least two, but~~ no more than the three, top available candidates for each office, except in the case of a tie vote. If there is only one candidate for a position that candidate shall run against an open write-in slot. Ballots for the election of the elective Executive Board members shall include if possible at least twice as many candidates as there are vacancies. A separate ballot shall be prepared for each term of office. Member laboratories may cast one vote for a candidate to fill each vacancy. All ballots will be submitted to the chairman of the Nominations Committee. A plurality vote will elect, and, in the case of elective Board Members, where two vacancies per term exist, the two highest will be elected.

4. The President shall announce the newly elected Officers and elective Executive Board Members at the close of the Annual Meeting.

SEED ABSTRACTS

1994 AOSA/SCST MEETING

Variation and Release of Dormancy in Red Rice Genotypes. K. PAQUIOT and J.C. DELOUCHE*, Mississippi State University.

The incidence of dormancy varied from 62 to 100% among six genotypes of red rice and two cultivars harvested 30 days past anthesis, while the period of dormancy at 30°C ranged from 3 to more than 25 days. Dormancy was most intense and persistent in the old medium grain cv. Nato and R-78-8, a brown-hull red pericarp genotype. Dormancy was released by seed soak treatments in water (40°C, 48 hr), ethylene chlorohydrin (0.10%, 24/48 hr), sodium hypochlorite (0.25%, 24 hr), gibberellic acid (0.11%, 24 hr), HNO_3 (2M, 30-40 min), and H_2S04 (concentrated, 20-25 min). Accelerated aging at 40° and 45°C appeared to release dormancy in some genotypes and induce dormancy in others. Overall, the most effective dormancy releasing treatment was the seed soak in 0.10% ethylene chlorohydrin.

Comparison of TZ Staining Patterns in Non-weathered and Weathered Sorghum Seed. A.S. GOGGI, C.H. ANDREWS, C.E. VAUGHAN and L.M. GOURLEY, Iowa State University and Mississippi State University.

The tetrazolium (TZ) test is frequently used in public and private seed laboratories as a quick test to determine seed viability. Another promising application for this test is the identification of causes of damage which lead to deterioration, but very few people have the training or skill to properly interpret many of the TZ staining patterns. To establish a TZ staining pattern based on deterioration caused by field weathering, both weathered and non-weathered sorghum seeds were stained for comparison. Two sorghum cultivars were selected at random based on seed color. Panicles from (AT2) 27-1-1-1-1 (experimental red-seeded line) and TX 635 (yellow endosperm line) were hand harvested at physiological maturity (black layer) for non-weathered seeds and 45 days after physiological maturity for weathered seed. Hand threshed seeds were prepared and stained with TZ as prescribed by the AOSA. Staining patterns in deteriorated (weathered) seeds revealed dead areas in the scutellum adjacent to the black layer and at the opposite end. As deterioration increased, the TZ staining pattern showed progressive deterioration in the scutellum and even in the embryonic axis.

Seed Quality of Preharvest-sprouted Wheat. N.R. Foster*, L.A. Burchett, G.M. Paulsen, Kansas State University.

Preharvest sprouting of wheat caused by frequent or prolonged precipitation after maturity decreases seed quality. Seed damaged by preharvest sprouting may not be acceptable for planting. Seed samples were collected as offered for sale from certified seed growers in August 1989. This study was conducted to evaluate seed quality and field performance of seed lots affected by preharvest sprouting. Sprouting level was measured by falling number; seed quality by test weight, protein, and germination; seed performance by accelerated aging and emergence from different planting depths; and field performance by field emergence and grain yield. Sprouting levels were characterized as low, medium, and high by falling number. Seed lots differed in quality and performance, but these differences disappeared in field studies. At the sprouting levels used in this study, damaged seed is realtively safe to plant or sell for current year production.

A method for estimating reduction in stand caused by sprouted wheat seed. T. G. Chastain*, K. J. Ward, B. L. Klepper, and D. E. Wilkins, Oregon State University and USDA-ARS.

A rapid, reliable method is needed to evaluate the planting quality of sprouted wheat seed. We developed a visual scoring system that was based on sprouting severity level: A = no visible sprouting, B = partial embryo exposure, C = full embryo exposure, and D = damaged embryo. Field trials conducted on Stephens soft white winter wheat over a 2-year period demonstrated that emergence for A, B, C, and D sprouted seed averaged 100%, 79%, 63%, and 15% of normal seed, respectively. A formula was developed to estimate stand reduction that uses stand reduction values for each severity level and the relative amount of the four sprouting severity levels present in the seed lot. Field testing of our method has revealed good agreement between estimated stand reduction values and seedling emergence. Sprouted seed lots from nine cultivars of soft white common, soft white club, and hard red market classes had similar field emergence when sprouting severity levels were equal among lots. Thus, results of our sprouting severity score are applicable across wheat market classes and cultivars.

Effects of Calcium Nutrition on Soybean Seed Quality. M.G. Burton*, M.B. MCDONALD, M.J. LAUER, M.L. EVANS, Ohio State University

The effects of calcium deficiency on indeterminate varieties of soybean [Glycine max (L.) Merr.] have not yet been characterized. Williams 82 soybeans were grown in a modified hydroponic arrangement in a glasshouse under different calcium (Ca) treatments in otherwise complete nutrient solutions. Calcium treatment levels included: 2 mM, 0.2 mM, and 0.1 mM. Additional treatments consisted of plants grown at: 2 mM Ca levels which were switched to 0.2 mM or 0.1 mM Ca levels at R5 (beginning seed) until harvest at R7 (beginning maturity). Plants were also grown at 0.1 mM Ca and were switched to 2 mM Ca at R5. Preliminary results suggest that there is no difference between treatments in germination rate of normal seeds or seedling axis dry weight. However, results from (AOSA) seedling vigor classification tests indicate a higher incidence of epicotyl necrosis and watery hypocotyl in the Ca deficient treatments. Seed yield is suppressed in the 0.2 mM and 0.1 mM (most severe) Ca treatments compared to the yield of the 2 mM Ca treatment. Seed size and abortion patterns based on proximity to the pedicel are also considered.

Effect of Baytan® 30 Seed Treatment on Potential Maximum Coleoptile Length and Its Impact on Stand Establishment. S.C. SHEN, Gustafson, Inc.

Baytan 30 is a systemic seed treatment containing the active ingredient Triadimenol which is a sterol inhibitor. It differs from most registered seed treatments as it also provides early season protection against the foliar diseases. Germination was not affected by the application of Baytan up to 325 ppm. Baytan 30 tends to cause the early split of the coleoptile. At the rate of 256 ppm, the reduction of the potential maximum coleoptile length (P.M.C.L.) ranges from 2.2 to 2.8 cm. Accurate and uniform chemical application is needed with any chemical, but this is especially important when using Baytan. The P.M.C.L. reduction and coverage uniformity information can be generated by seed analysts at a laboratory. This will be discussed at presentation. Genetics and growing temperature also have great impact on P.M.C.L. More than 100 wheat varieties have been profiled. The P.M.C.L.ranges from 5.8 cm to 11 cm at 20°C. For a given seed lot, the P.M.C.L. at 25°C can be as much as 2 cm shorter than at 20°C. Since the coleoptile provides protection for the leaves as they push up through the soil, the stand establishment can be impaired if the P.M.C.L. is shorter than the planting depth, especially under crusting surface. Seed analysts should be educated on the importance of the P.M.C.L and its distribution to help avoid the stand loss.

Development of priming techniques for Kentycky bluegrass seed. J. Tanaka, Oregon state University.

A reliable method of germination enhancement by seed priming would promote the stand establishment ability of Kentucky bluegrass (*Poa pratensis* L.) and enable it to compete more successfully with other turfgrass species. The objective of this study was to determine the effect of cultivar, age, and dormancy on the response of Kentucky bluegrass seed to non-osmotic priming under favorable and unfavorable environments. Seeds were primed 10 d in a 0.2% KNO_3 solution at 5-15°C with 8 h light daily, and dried. Enough solution was added to raise the seed moisture content to 35% (fw.). Priming response was evaluated under favorable and unfavorable germination conditions in the laboratory and field. The priming response was dependent on cultivar, age, and dormancy level, as well as germination temperature. In laboratory evaluations, the germination percentage of the most dormant cultivar was increased up to 42%. The 1 to 5-d increase in germination speed was proportional to the dormancy level of the seed lot. Synchrony of germination was improved by 1 to 4 d in year- old seed, but no improvement was evident in new-crop seed. Priming partially overcame the germination requirement for alternating temperature in year-old seed but not in new-crop seed. In soil tests, priming was most effective on seed with intermediate dormancy, but the overall response was reduced. In the field, seedling emergence of only one of eight cultivars was improved by priming. Priming does not appear to be a practical approach to seed enhancement of Kentucky bluegrass since seed lot response was variable and inconsistent, and the added expense might make the practice prohibitive.

Moisture Exchange and Equilibria in Soybean Seed Blends. Marwanto, E. R. CABRERA and J. C. DELOUCHE*, Mississippi State University

Moisture exchange between low moisture (LMC) and high moisture (HMC) soybean seeds in blends of different proportions was very rapid. At 10°C 35-45% of the moisture exchange between nominally 10 and 16% moisture seeds occurred within 6 hr, 80-90% within 2 days, and 96-100% within 5 days, while at 30°C 46-50%, 90-99%, and 100% of the exchange was completed in 6 hr, 2 days and 5 days, respectively. The rate of moisture exchange, however, was not affected by the proportions of LMC and HMC seeds in the blend. HMC seeds attained equilibrium moisture content (EMC) at a slightly higher moisture level through desorption than the LMC seeds did through absorption due to the hysteresis effect and the difference was maintained during the 90-day equilibration period. Hardseededness in the D86-4565 soybean line decreased from 25% to 2% in 15 weeks when the seeds were blended with seeds of a soft-seeded cultivar at 14.2% moisture.

Random Amplified Polymorphic DNA (RAPD) from Seeds used in Cultivar Purity Determinations. M.B. MCDONALD*, L.J. ELLIOT, AND P.M. SWEENEY, Ohio State University

Random amplified polymorphic DNA (RAPD) has emerged from biotechnology research as a practical genetic identity determinant useful in plant breeding, seed production, and seed testing programs. This report describes a DNA extraction procedure from dry seeds of corn (*Zea mays* L.), cotton (*Gossypium hirsutum* L.), soybean [*Glycine max* (L.) Merr.], wheat, (*Triticum aestivum* L.), and red clover (*Trifolium pratense* L.) that can be successfully employed in subsequent RAPD amplification of DNA fragments. The technique also extracted DNA from dry peanut (*Arachis hypogaea* L.) seeds, but no DNA fragments were observed following RAPD amplification. This procedure is an alternative to electrophoresis of seed proteins that is inexpensive, simple, fast, avoids the use of growing plant tissue, and is applicable to a number of crops.

Identification of Grass Cultivars by Isoelectric Focussing of Seed Proteins. K. FÖRSTER*, H. HAHN, M. TORNOW, W. SCHÖBERLEIN, Martin-Luther-University Halle-Wittenberg, Germany

Seeds of cultivars, selected lines and ecotypes of Festuca pratensis Huds., Poa annua L. or Poa supina Schrad. are morphological difficult to distinguish. Therefore bulked seed samples were characterized electrophoretically by their seed protein patterns in ultrathin-layer polyacrylamide gels with a wide pH gradient. Results of several years show typical banding patterns given by isoelectric focussing of chlorethanol-soluble proteins and allow the clear distinction between samples of 48 different cultivars of Festuca pratensis. In a range of pH 4 to 9 variable protein bands are located, which are essential for distinguishing of the tested cultivars. Typical banding patterns of F. pratensis were found at pH 6 and in the basic range. By means of them a discrimination from other Festuca species and grasses is possible. Analogous to Festuca we have identified Poa annua and Poa supina.

Identity and purity of breeding material of Poa annua and cultivars of F. pratensis can be verified by means of isoelectric focussing of seed proteins. In case of mixed seed samples a single seed analysis is indicated on condition that the frequency of species specific protein patterns is known and stable over the years within determined borders.

This work was supported by a grant of the Ministerium für Wissenschaft und Forschung des Landes Sachsen-Anhalt.

Effect of Seed Vigor on Pod Yield (Fresh Weight) in Field Grown Garden Bean.

D. M. TEKRONY* and M. RUCKER, University of Kentucky

Although seed vigor has been related to yield (dry seed weight) in grain crops, there has been little research to relate seed vigor to field performance in vegetable crops. This study was conducted to evaluate the effect of seed vigor on vegetative (plant) and early reproductive (fresh green pods) yield in garden bean (Phaseolus vulgaris L). Seven seed lots of 'Bush Blue Lake-47' were selected annually which had acceptable germination (>80%), but a range in vigor as measured by the cold, accelerated aging and seedling vigor classification tests. These seed lots were planted in near ideal field conditions in 1990, 1991, and 1993 at a seeding rate of approximately 20 seeds m^{-1} of row in 4-row plots 6 m. long at a row spacing of 76 cm. A vegetative plant harvest was made at full bloom and an early reproductive pod harvest was made when the pod diameter of approximately 50% of the pods exceeded 8 mm. The results of all laboratory tests (including standard germination) were combined into a vigor index for each seed lot which was related to field performance. Greater than 80% field emergence occurred for all seed lots each year which resulted in acceptable field stands for maximum yield potential. Although there were differences in pod yield among years, there was no significant effect of seed vigor on the yield of pods (total fresh weight) within any year. Likewise, there was no relationship between seed vigor and vegetative yield (dry weight) when plants were harvested at full bloom. Thus, when adequate plant populations were achieved in the field, there was no effect of seed vigor on pod yield in garden bean.

REPORTING DORMANCY IN SEEDS OF ANNUAL GRAIN CROPS

by
Arnold L. Larsen

An important method of survival evolved by most plant species is the ability to select germination conditions that provide new seedlings with the best chances of growth. This ability is provided by dormancy mechanisms located within seeds. Dormancy yields to favorable environmental conditions or time. In the domestication of most annual species harvested for their seeds, plant breeders try to eliminate or modify the influence of dormancy mechanisms so that the farmer is in control of when and where the seeds germinate. For the most part, plant breeders are successful; however, under certain environmental conditions where seeds mature to their fullest potential, some latent dormancy mechanisms develop. This reestablishment of germination control in seeds of domesticated species has occurred in wheat, barley, proso millet, oats, crambe and several other annual crops. Dormancy in seed is expressed by failure to germinate, delayed germination, or germination over an extended period of time (like all summer).

It is documented that several farmers have suffered crop failures by planting seed lots that were dormant but not reported as such on the seed label. The problem arises when seed dealers and sales people are reluctant to sell seed with a label that includes a dormancy percentage in the viability statement. Many seed analysts also prefer reporting all viability in terms of germination in response to the pressures from the seed industry and the extra labor involved in making dormancy determinations.

When all the viable seeds do not germinate by prescribed AOSA procedures, the remaining seeds not germinated are to be tested for viability by the tetrazolium test or other means. Those testing positive for viability are to be reported as "dormant". Then the total viability is the sum of the germination and dormant percentages. To reduce analytical time and to meet with the approval of the seed marketing people, seed analysts will perform extensive research in an effort to find a procedure that will make all viable seeds germinate regardless of the degree of dormancy. When they discover such a procedure, they present a proposal to the AOSA membership requesting a rule change which establishes the new procedure. Quite often these are accepted and seeds of the crop kind in question will no longer have dormant seed reported regardless of the degree of dormancy. In support of this action there are two dangerous generalizations:

1. Viable seeds that do not germinate in the laboratory will probably germinate in the field, and

2. Seeds that are dormant when tested in the laboratory will probably not be dormant by planting time.

Both generalizations are flawed as evidenced by the crop failures that have occurred.

Who is really responsible for these crop failures? Is it the seed producer, seed dealer, seed analyst, or farmer? The seed with a high degree of dormancy is probably high in other aspects of quality so the seed producer has done a good job. The seed dealer and farmer simply believe what they are told or can read on a seed test report so they are not responsible out of naivety. It is the seed analyst who determines the factors that express seed quality and makes measurements of them. This information is supplied to all concerned who believe that the seed analyst has taken full inventory of all that is ultimately important to the production of a crop from that seed. One factor often overlooked is reporting dormancy.

The seed analyst should evaluate the quality of the seed as it is when the seed sample is received and should not anticipate what it will be at planting time. If, at the time of testing in the laboratory, some resistance to germination is found that is caused by a dormancy mechanism, that fact is valuable information for everyone. The seed lot must be monitored regularly until resistance is diminished to assure that there will be no dormancy induced crop failures after planting.

If seed analysts must use dormancy breaking procedures, they should also use procedures that do not break dormancy. The results from both procedures should be reported. With this information the labeler is in a position to accurately label the seed lot and help avoid crop failures. Dormancy is an important quality factor and should be reported. We must stop reporting viability in terms of only germination for in doing so great financial damage can be done to unsuspecting growers.

The Influence of Scab (*Fusarium* spp.) on Seed Germination

Brent Turnipseed
Director, SDSU Seed Testing Lab

In the upper Midwest we had an unusual growing season in 1993 (wet and cold) and with it we have seen many problems in seed testing. More weed seeds and disease problems, especially scab! Scab, also known as head-blight, infected several crops reducing yield and value of the crops. Crops infected in South Dakota were wheat, rye, barley, intermediate and pubescent wheatgrass. The scab fungi (*Fusarium* spp.) and their associated byproducts (mycotoxins) have caused wide-spread problems in marketing and utilization of infected wheat. It has also caused problems in germination testing.

Standard Germination Tests

When a laboratory conducts a normal or standard germination test, 4 replications of 100 seed are tested under ideal conditions. Scabby seed planted this closely together will increase and promote fungal growth and secondary infections, resulting in decreased germination on towels or blotters.

Due to scab in our region, germination testing procedures were altered to reduce secondary infections in the crops listed above, allowing easier seedling evaluation by the analyst. Secondary infections are those caused by a seed or seedling coming in contact with mycelium (spider-web like growth of the *Fusarium*) from a diseased seed or seedling, which can lead to death or abnormalities of the healthy seed or seedlings. One of the ways our lab has reduced secondary infections is to spread out the seeds. Instead of 4 x 100 seed replicates, eight replications of 50 seed were planted to increase distance between seeds. The final count can also be made a day or two earlier to avoid further secondary infections and excessive mycelial growth on towels and blotters. This is an accepted practice in our region and is commonly used in the industry. In our experience, just spreading out the seed can increase the germination by up to 10%.

Seed Treatment

The SDSU Seed Testing Lab has also conducted many germination tests on scabby wheat seed, where the same sample is tested untreated, and treated with a fungicide (Vitavax 200). We found that seed treatment increased the germination by 10-14% on average. The fungicide suppressed infection by and growth of *Fusarium*, thus allowing many of the seeds or seedlings to reach the condition evaluated as a normal seedling.

Regulatory Testing

Laboratories conducting regulatory testing should be aware of the problems caused by scab (*Fusarium* spp.) in the upper Midwest, and realize that when testing seed imported from this region you may have to alter your planting and counting procedures to obtain accurate results. Without altering procedures (planting 4 x 100 seed replications), results can be disastrous due to secondary infections that take place early enough to prevent many seeds from even germinating, causing you to assume seed is dead. Other decayed/infected seedlings may get counted as abnormal due to uncertainty as to whether the infection was primary or secondary. One other point to realize is that germination of scabby seed can be highly variable. Variation among the replications planted is often higher than normal, and germination tests, if planted at different times from the same sample or lot can show wide variations in results.

The National Grass Variety Review Baord
List of Approved Ryegrass Varieties
with Fluorescence Test Results

PERENNIAL RYEGRASS					
Variety	Year Approved	PVF[1]	Variety	Year Approved	PVF[1]
246	1991	0.27	Lindsay	1991	1.72
856	1991	0.87	Linn	1991	5.00
89-90	1994	2.15	Magic	1994	1.21
Accolade	1992	4.83	Manhattan II	1991	0.65
Accord	1993	4.08	Navajo	1991	0.37
Achiever (Pick 1800)	1993	0.30	NightHawk	1993	1.39
Advent	1991	0.14	Nova	1991	1.00
Agresso	1991	2.00	Palmer	1993	1.04
All*Star	1992	0.47	Palmer II	1993	1.51
Assure	1991	0.72	Pennant	1991	0.50
Bedford	1991	1.40	Pleasure	1992	1.42
Brightstar	1993	1.79	Prelude II	1993	2.25
Buccaneer	1994	2.01	Quickstart	1991	0.18
Caliente	1992	0.74	Regency	1991	0.99
Calypso	1993	1.29	Repell	1992	0.33
Dandy	1991	2.00	Repell II	1993	1.56
Delaware Dwarf	1992	0.61	Reveille	1991	2.00
Derby Supreme	1991	2.85	Riviera	1992	0.58
Dillion	1992	4.14	Seville	1992	0.33
Edge	1992	1.73	Stallion Select	1994	2.37
Envy	1991	0.22	Statesman	1993	1.27
Equal	1994	1.98	Target	1991	3.28
Express	1992	1.00	Topeka	1993	2.34
Grimalda	1991	2.00	Vantage	1991	2.19
Koos 90-2	1994	3.85	Yorktown III	1993	1.42
Legacy	1991	0.37			

[1] Percentage Varietal Fluorescence

Annual Ryegrass		
Florida 80	1992	98.89
Jackson	1992	98.80
Marshall	1991	96.00
Surrey	1992	98.91
TAM 90	1994	98.45

COMPUTER SYMPOSIUM ABSTRACTS

INTRODUCTION **Rodger Danielson, Corvallis, Oregon**

The purpose of this computer symposium is to assemble computer applications in use today in seed testing laboratories and related programs. It is intended for a computer illiterate audience in hopes of focusing on how computers can help with the needs of seed programs.

Short presentations will cover the use of computers in: seed sampling, the seed lab, seed herbarium and nomenclature, identification and training. Following the presentations, participants may visit demonstration booths where they may pursue their interest more in-depth with the programmers.

SAMPLING **L.W. Nees, R.L. Geiger, West Lafayette, IN**

Computerizing Your Inspection Field Staff. The job of an "inspector" with a state regulatory agency requires a working knowledge of several state laws and the ability to manage large amounts of data associated with each program area. Inspectors employed by the Indiana State Chemist and Seed Commissioner work major program areas associated with feed, fertilizer, and seed, along with other related groups. It has become necessary to reduce the amount of hard copy data and allow for easier access to needed information while conducting marketplace surveillance inspections. Laptop computers have provided that convenience to our fieldstaff. System goals in our computerization programs include (1) eliminate cumbersome, hardcopy files, permit and registration lists, etc., (2) allow for easy data management and manipulation by the inspector in the field, (3) use existing software, (4) acquire hardware designed for use in the field i.e., lightweight, durable, portable, and (5) develop a "user-friendly" system for novice computer users. The benefits received from such a system include (1) providing the field staff a system to manage data to benefit them as well as program administrators, (2) eliminating the need to generate lengthy files and lists for weekly updates for field staff, (3) providing the field staff a word processing system to generate reports and correspondence as needed.

SEED LAB **Robert Miles, Corvallis, Oregon**

Computerized Seed Lab Management. The computer revolution has brought a wealth of new capabilities to the desktop. The improved efficiency, accuracy and basic record keeping functions inherent to database systems, have long been available to small businesses. Now these functions can be combined with the ease of use and increased capabilities previously available only on expensive minicomputers and mainframes.

With the advent of the graphical environment, the computer can now model how people work, instead of forcing people to learn commands and new ways of doing their job. We have taken advantage of this technology in the implementation of our Seed Lab Management System. We can send and receive faxes, produce new reports and graphs, and share this information over a network of computers, all at the push of a button.

Our Seed Lab Management Software is extremely easy to use, reliable, inexpensive, and is a very powerful tool which allows the Lab to focus on improving business rather than the computer.

SEED LAB **Gene Dade, Salem, Oregon**

Computer Applications for Seed Testing Laboratories. Applications written specifically for seed testing laboratories, based on careful analysis of laboratory procedures, offer the prospect of substantial reductions in time required to enter laboratory results and print seed analysis reports. Uniform appearing reports, accurate detailed invoices, fewer typographic errors, and minimal training are additional features associated with well-designed applications.

Beyond day-to-day demands, computer applications offer flexibility. Databases created for basic laboratory functions can be utilized in a number of ways to improve laboratory management and to expand services to clients. These range from routine office uses such as printing a rotary address card for a new customer or labels for customer mailings to employing more sophisticated search and retrieval tools for special purposes.

Widely available microcomputers, coupled with an application developed for the purpose, offer inexpensive and reliable means of implementing improved records management for seed testing laboratories.

HERBARIUM **Don Russ, Corvallis, Oregon**

Herbarium (OSU Seed Laboratory). A computer software system to catalog the herbarium at the OSU Seed Laboratory. This software system provides a method to create, store, and retrieve information about a herbarium, in conformance with accepted standards of taxonomy and nomenclature. The system allows access through and changes of phylum, genera, species, obsolete species, and common name for specimens in the collection. Searches based on phylum, genera, species, obsolete species, and common name may be performed. These queries may also be performed on information provided by the Germplasm Respository Information Network.

IDENTIFICATION Richard Old and C.K. Butts, Pullman, Washington

Computer Aided Species Identification. Recent technological developments have opened the door to some exciting opportunities in the field of identification. Rather than attempting to answer a rigid series of questions, as is required in dichotomous keys, the user can now access the data in a manner consistent with their skill level and specimen.

From a menu-driven computer program, the user selects any character of their choice, ie., for plant identification the user could choose from flower color, milky juice, leaf length, etc. The program then eliminates from the database all species that do not match the selected character. The user then selects another characteristic and continues to reduce the database. At any point in the process the remaining species can be listed. If, at any point, the user is unsure of what character to select, the computer can be queried as to the best selection to make. The user is then presented with a list of suggestions in order of their relative effectiveness in reducing the database. This query process is dynamic and suggestions vary depending upon the remaining species. This approach can be used for all or part of the identification process.

Once a species is determined through the identification process or selected from the species list, the following information is available to the user: (a.) the complete file of identifying characteristics, (b.) common name and scientific name, (c.) page numbers in various reference books, and (d.) a species specific text file.

A complete authoring system is available which allows the characters, character states, help screens, references, and text screens to be created and customized to accompany any data set, i.e., Seeds of North American Woody Plants, Poisonous Plants of Southern Florida, Insect Families of South America, Pathogens of Coniferous Trees, Birds of the West Coast, etc. Line drawings can also be inserted directly into the program for clarification of menu terminology and line drawings or full color photos may be included for final species identification.

TRAINING Jim Sheppard, Ottawa, Ontario, Canada

Computer Based Training in Seed Technology. Computer Based Training (CBT) is rapidly becoming a popular means of self-paced training for training and retraining students, professionals and technicians in government, education, and private industry. Agriculture and Agri-Food Canada's Central Seed Laboratory is utilizing the potential of CBT as a training tool for seed analysts and inspectors.

Course modules with high resolution color images of seeds, seedlings, disease symptoms, or fungal spores are being combined onto diskettes and distributed to students for study or as reference material. Tests can be included as part of the courseware and the results used to track the analyst as he or she masters each objective towards completion of a course.

In the Seed borne Disease Unit we have been investigating this approach to create "worksheets" for the detection and identification of seed born pathogens. Similar lessons could be constructed for purity or germination analysts, for the identification of weed seeds, crop species, or seedling evaluation. At the end of the "course" or at various points throughout the lessons the student may be quizzed to monitor their progress through the subject matter.

SEED STORAGE SURVEY

Dan Curry and W. C. Ebener

ABSTRACT

A special working group of individuals from a past AOSA/SCST seed conditioning subcommittee felt that information concerning seed storage was lacking. This group developed a questionnaire concerning the storage of seed samples.

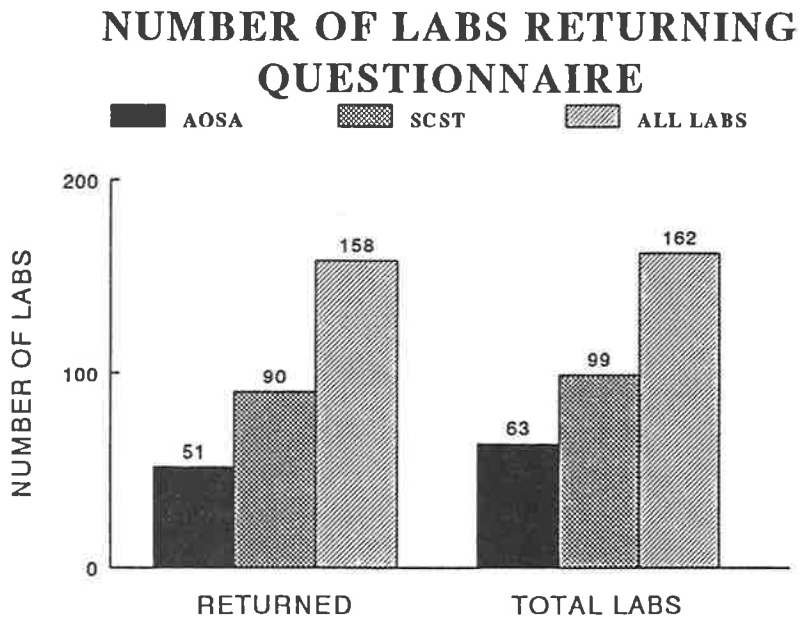
The questionnaire was sent to all participating AOSA/SCST labs in March of 1993. Ninety-eight percent of the laboratories responded to the survey. The length of storage of the seed samples ranged largely from 12 to 36 months. It was found that the seeds were stored in small samples. The major type of lab tests performed on stored seed include germination, purity, vigor, and noxious weed exams. The majority of seeds tested are cereals, large and small seeded legumes, oil seeds and vegetable seeds. Some of the methods used in storage include the use of the Gamet Seed Divider to divide the seed and paper envelopes for seed storage containment. The temperature and humidity of the storage areas averaged 54 degrees Fahrenheit and 43% humidity, respectively.

1993
SEED STORAGE
QUESTIONNAIRE

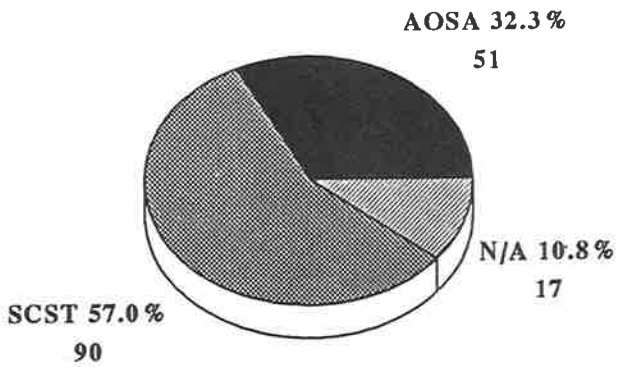
OBJECTIVE

1) Determine the seed storage methods of different seed laboratories.

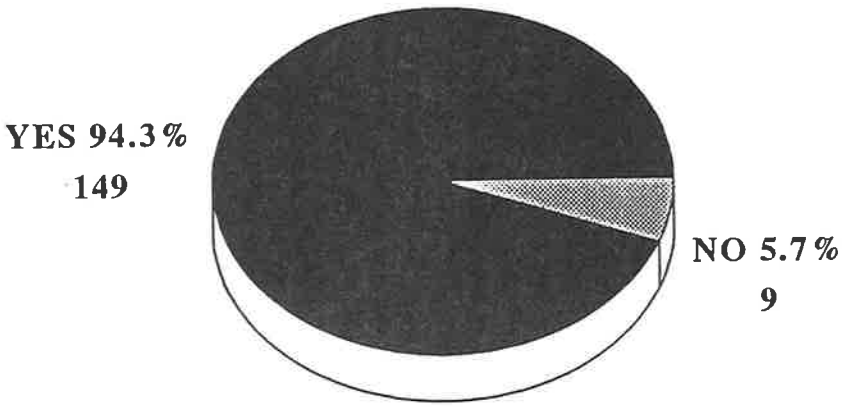
2) Become more aware of our own seed laboratory practices.



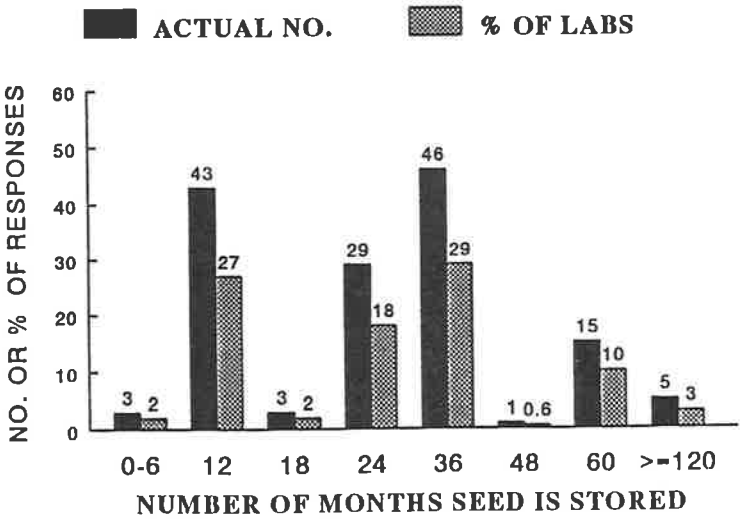
TYPES OF LABORATORIES RESPONDING



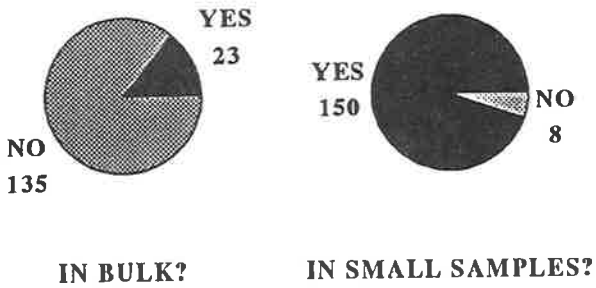
STORE FOR AN EXTENDED PERIOD?



DURATION OF STORAGE

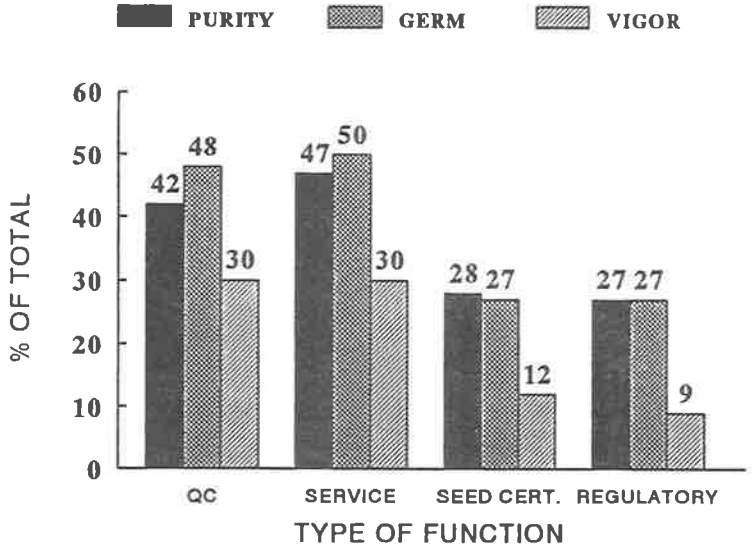


HOW ARE SEEDS STORED?

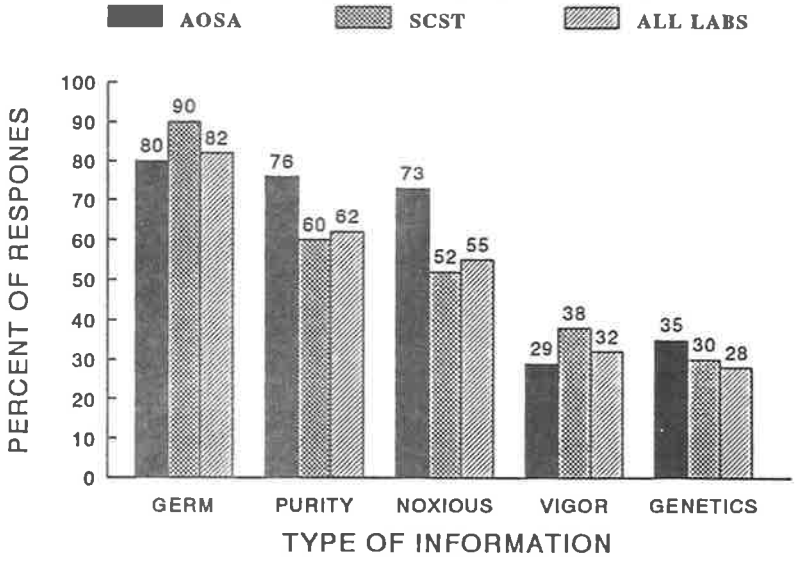


PRIMARY FUNCTION OF LAB

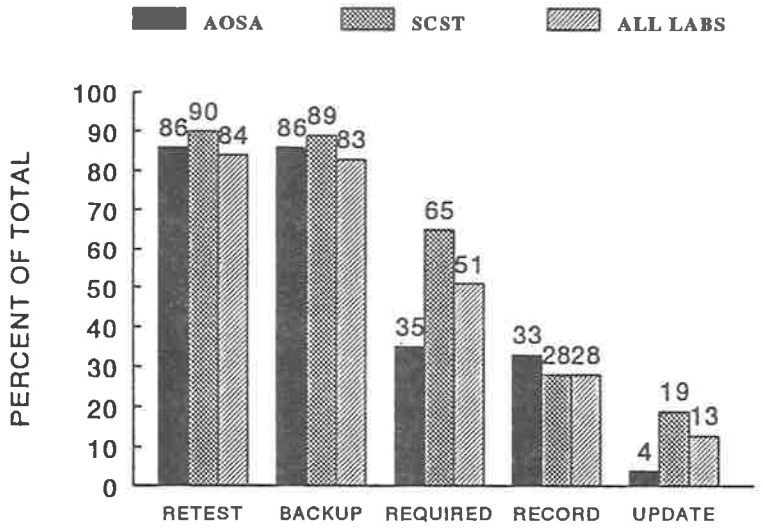
INCLUDES ALL LABS



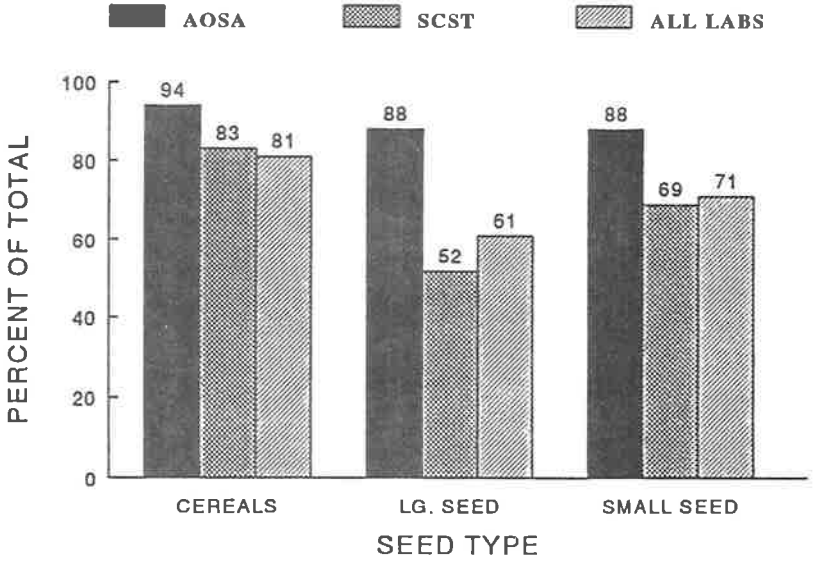
INFORMATION FROM STORED SEED AFTER INITIAL TESTING



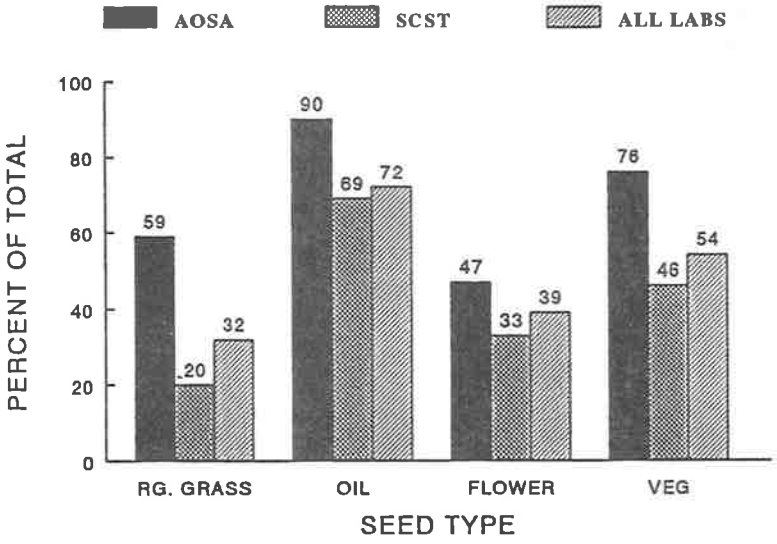
WHY STORE SEED?



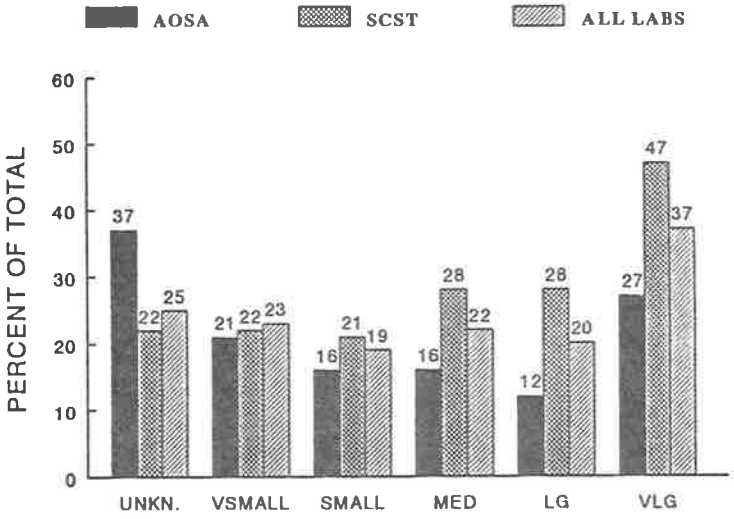
TYPE OF SEED STORED



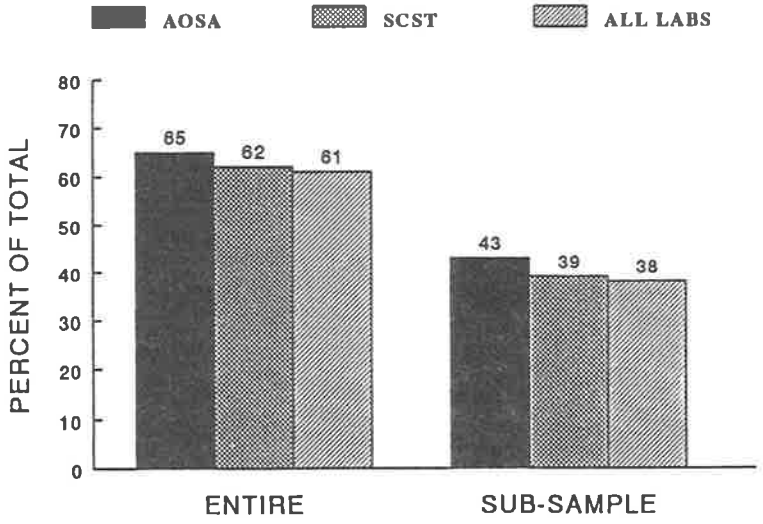
TYPE OF SEED STORED



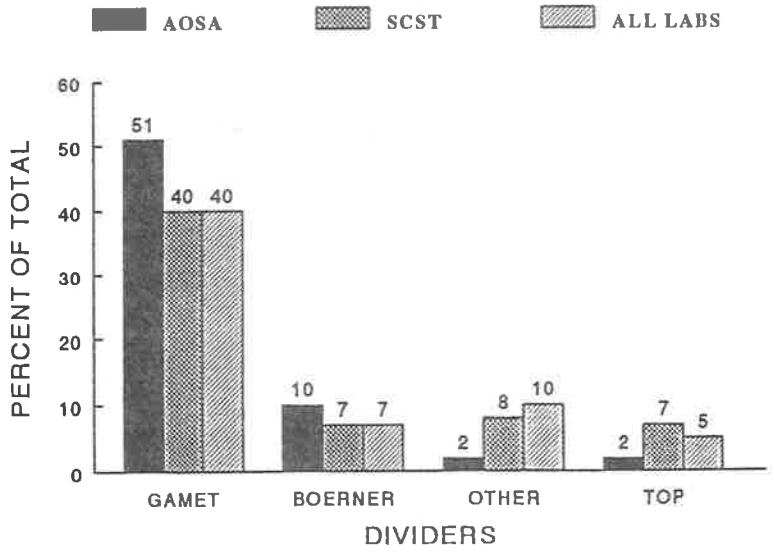
AVERAGE SEED LOT THAT SEED SAMPLE REPRESENTS



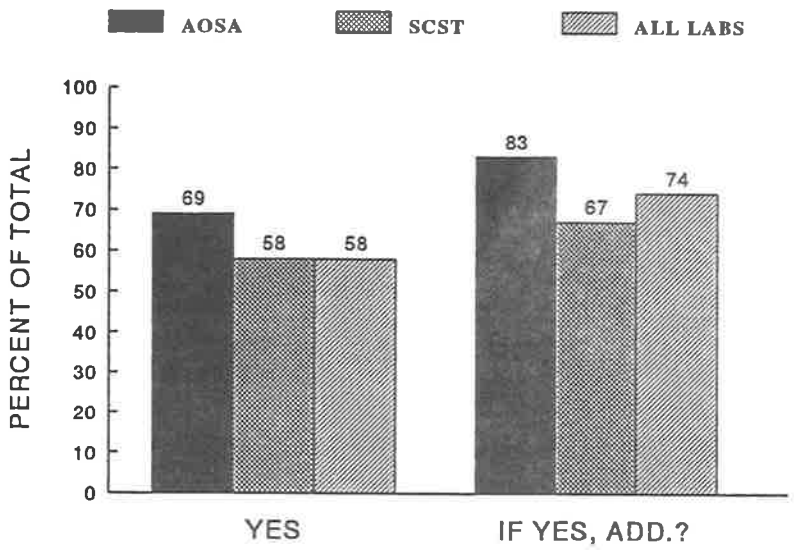
HOW MUCH INTO STORAGE?



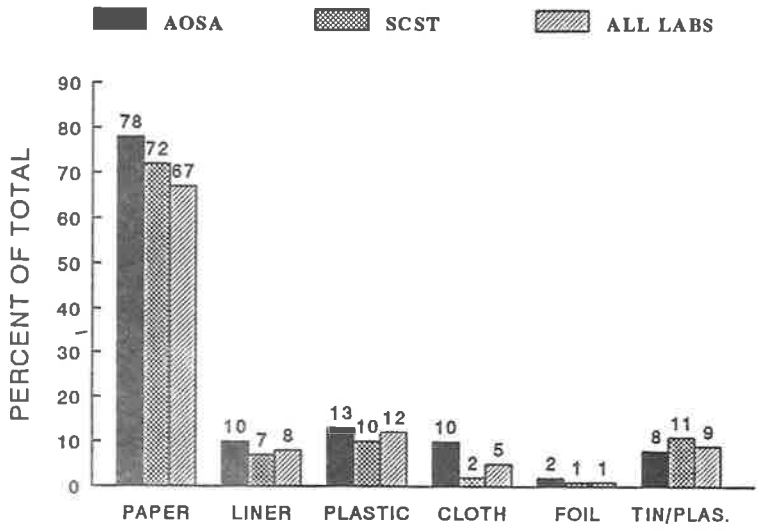
HOW IS SUBSAMPLE OBTAINED?



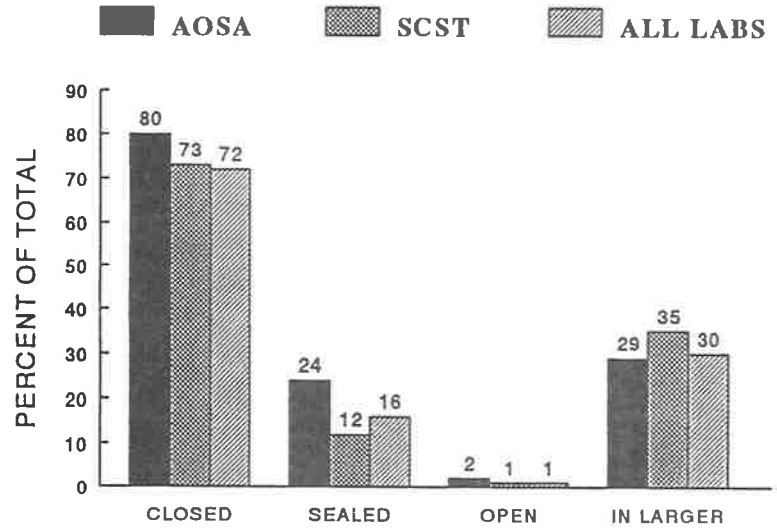
·DO YOU STORE PURITY COMPONENTS?



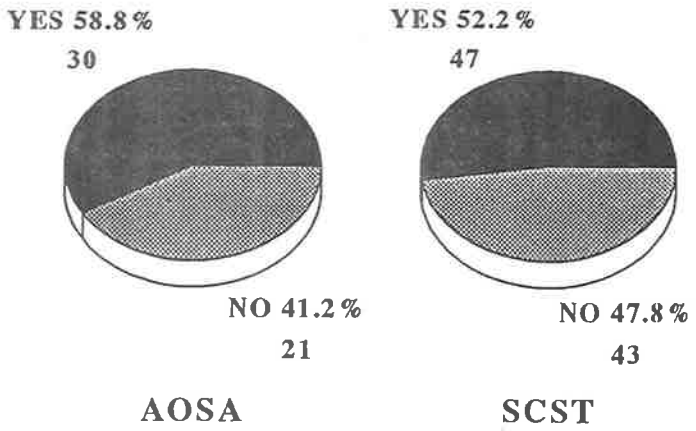
TYPE OF CONTAINER USED



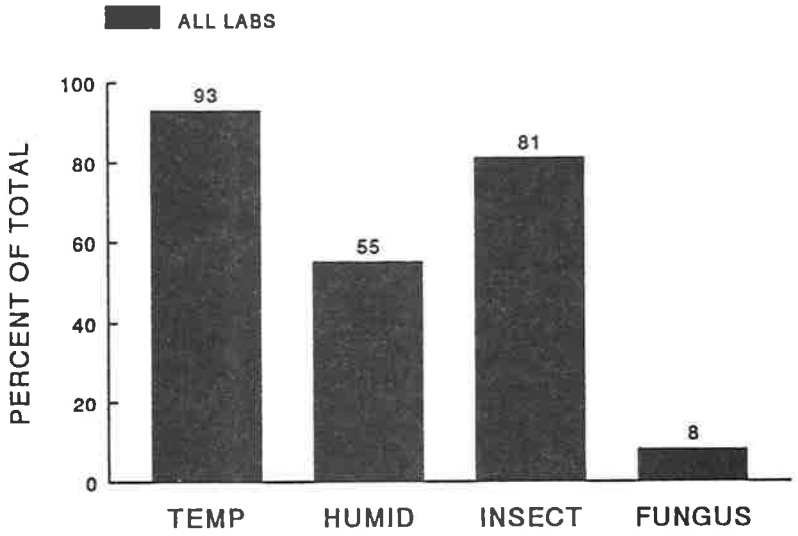
ARE CONTAINERS?



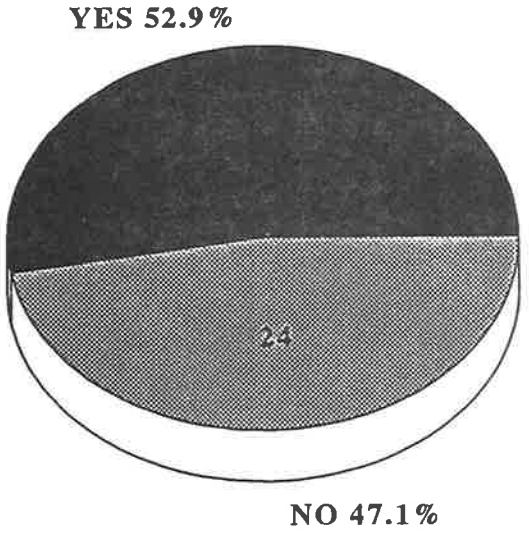
STORED IN CONTROLLED ENVIRONMENT?



CONTROLLED ENVIRONMENT?
(AT YOUR LAB)

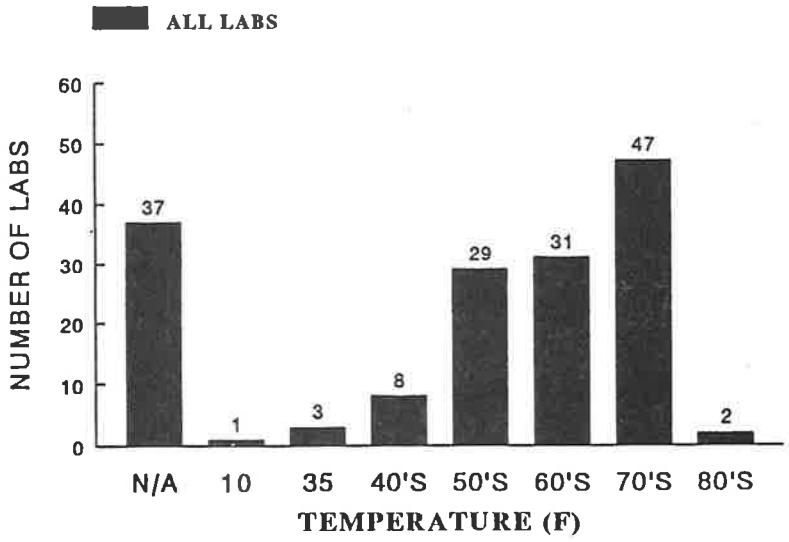


SECURED?
(OF OFFICIAL LABS)

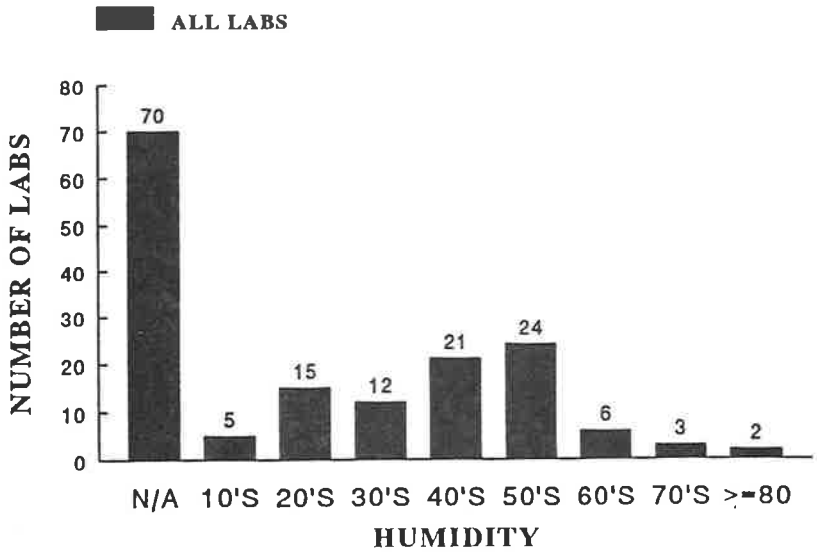


AOSA

STORAGE TEMPERATURES



STORAGE HUMIDITY



OBSERVATIONS:

1) 5% OF ALL LABS SAMPLE OFF THE TOP.

Is there a more appropreate method of obtaining a representative sample?

2) 47% OF ALL LABS DO NOT SECURE THE STORAGE AREA.

Should this be a concern?

OBSERVATIONS (cont.)

3) THE MAJORITY OF LABS:

a) STORE OIL SEEDS (72%)

b) PERFORM GERMINATION TESTS ON STORED SEEDS (82%)

c) USE PAPER TO CONTAIN THE SEED (67%)

d) DO NOT SEAL THE BAGS IN STORAGE (84%)

Since seed moisture loss can be significant under these conditions, is there a preferred method of seed containment ?

March 26, 1993

Thanks for sending us a copy of the Storage of Seed Samples questionnaire. It's not often I really have a chance to sit down and think about the way we store our samples here. I had forgotten about some of our own samples that have been here for about 5 years now. My memory has been jogged so I guess I have some unfinished buisness to take care of; off to the dump.

Thanks again.

Kind Regards,

Tony Guida
QA Seed Lab Supervisor

1993 SEED STORAGE QUESTIONNAIRE

OBJECTIVE: To determine seed laboratory methods of storing seed samples after initial testing.

LABORATORY MANAGER/DIRECTOR, PLEASE RESPOND TO THE FOLLOWING QUESTIONS:

158 responded / 162 total labs (97.5% return rate)

* PLEASE CHECK APPROPRIATE CATEGORY.

51	AOSA Laboratory
90	SCST Laboratory
17	N/A

* DOES YOUR LABORATORY STORE SEEDS FOR AN EXTENDED (> 1 mo) TIME? (IF NO, YOU ARE FINISHED, PLEASE RETURN QUESTIONNAIRE.)

9 NO, 149 YES.

IF YES, DURATION OF STORAGE _____.

NO. RESPONSES	No. of months
13	N/A
3	2-6
43	12
3	18
29	24
46	36
1	48
15	60
5	>=120

* PLEASE INDICATE HOW THE SEEDS ARE STORED -

23/158	BULK (i.e., in the warehouse)
150/158	SMALL SAMPLES (i.e., in the lab, warehouse)

IF YOU ANSWERED "**BULK**" ONLY, YOU ARE FINISHED. PLEASE RETURN QUESTIONNAIRE.
IF YOU ANSWERED SMALL SAMPLES ONLY, OR BOTH **BULK** AND **SMALL SAMPLES**, PLEASE CONTINUE, BUT RESPOND TO THE FOLLOWING QUESTIONS BASED ON STORAGE OF SMALL SAMPLES ONLY.

* THE PRIMARY FUNCTION(S) OF YOUR LABORATORY: (place an "X" in the appropriate row and column).

	TYPE OF LAB TESTS PERFORMED			
SERVICES RENDERED TO	PURITY	GERM.	VIGOR	OTHER #
QUALITY CONTROL WITHIN A PRIVATE COMPANY	AO SC ALL 8 56 66	AO SC ALL 8 64 76	AO SC ALL 7 40 48	see below NO. **A1**
SERVICE SAMPLES, OPEN TO GENERAL PUBLIC	AO SC ALL 37 34 75	AO SC ALL 37 38 79	AO SC ALL 23 23 48	see below NO. **A2**
SEED CERTIFICATION, PUBLIC VARIETIES	AO SC ALL 26 18 44	AO SC ALL 26 17 43	AO SC ALL 10 9 19	see below NO. **A3**
REGULATORY, STATE AND/OR FEDERAL	AO SC ALL 39 3 42	AO SC ALL 40 3 43	AO SC ALL 13 1 14	see below NO. **A4**
OTHER #				NO. **A5**

If other, please specify.

A1) TZ, disease, cultivar growouts, planter checks, sizing, green house, dormancy, seed health.

A2) TZ, test weight, endophyte, genetic ID, seed borne diseases, moisture, seed counts, noxious, pathology, phytosanitary, phenol and coleoptile (wheat), seed health.

A3) variety purity, TZ, moisture, seed counts, electrophoresis

A4) TZ, moisture, seed count

A5) variety ID, seed treatment

* PLEASE INDICATE WHAT INFORMATION IS TO BE OBTAINED FROM SEEDS STORED AFTER INITIAL TESTING (mark all appropriate categories).

130/158	GERMINATION
98/158	PURITY
87/158	NOXIOUS WEED EXAM
51/158	VIGOR
45/158	GENETIC INFORMATION
SEE BELOW	OTHER (please specify)

(seed pathology, TZ, seed protectant studies, 1000 kernel weight)

* PLEASE INDICATE WHY YOU NEED TO OBTAIN INFORMATION FROM STORED SEEDS (mark all appropriate categories).

132/158	RETEST
131/158	USED AS A BACKUP TO VERIFY LAB RESULTS, IF NEEDED
80/158	REQUIRED BY LAW
44/158	RECORD OF ANALYSIS
21/158	UPDATE INFORMATION ON WAREHOUSE BULK STORAGE SEEDS
SEE BELOW	OTHER (please specify)

(purity, summer growout, research, seed protectant studies)

* PLEASE INDICATE THE TYPES OF SEEDS STORED IN YOUR LABORATORY.

128/158	CEREALS (e.g., corn, wheat, sorghum, oats, millet, rye, barley)
96/158	LARGE SEEDED LEGUMES (e.g., field beans)
112/158	SMALL SEEDED LEGUMES (e.g., alfalfa, clovers, vetches)
51/158	RANGE GRASSES (e.g. Indian grass, big bluestem, alkali sacaton)
113/158	OIL SEEDS (e.g., sunflower, cotton, canola (rape), safflower, soybeans, and peanuts)
61/158	FLOWER SEEDS
86/158	VEGETABLE SEEDS
SEE BELOW	OTHER (please specify)

(tree, shrub, wildflower, herbs, small grasses, turf grasses)

* WHAT IS THE "AVERAGE" SIZE OF THE SEED LOT THAT THE SEED SAMPLES REPRESENT?

39/158	UNKNOWN
36/158	VERY SMALL (less than 100 lbs.)
30/158	SMALL (100 to 1,000 lbs.)
34/158	MEDIUM (1,000 to 5,000 lbs.)
31/158	LARGE (5,000 to 10,000 lbs.)
58/158	VERY LARGE (greater than 10,000 lbs.)
_____	OTHER (please specify)

* HOW MUCH SAMPLE MATERIAL DO YOU PUT IN STORAGE?

96/158	THE ENTIRE SUBMITTED SAMPLE (less seed used in testing)
60/158	A SUB-SAMPLE (enough for a purity and noxious exam)
_____	OTHER (please specify)

* IF A SUB-SAMPLE OF THE SUBMITTED SAMPLE IS STORED, HOW IS THAT SUB-SAMPLE OBTAINED?

63/158	GAMET DIVIDER
11/158	BOERNER DIVIDER
16/158	OTHER MECHANICAL METHOD OF "EQUAL" DIVISION
8/158	"FROM THE TOP"
Riffling	OTHER (please specify)

* DO YOU STORE THE PURITY COMPONENTS OBTAINED AFTER A PURITY ANALYSIS FOR EVERY SAMPLE SO TESTED?

66 NO 92 YES

IF YES, IS THIS IN ADDITION TO STORING A SUB-SAMPLE FROM THE SAME LOT?

24 NO 68 YES

* CHECK THE TYPE OF SAMPLE CONTAINER MOST COMMONLY USED FOR STORING SEED. (check only one)

<some people checked more than once therefore 166 responses not 158>

111/166	PAPER ENVELOPES OR PAPER BAGS
12/166	PAPER ENVELOPES WITH PLASTIC LINER
19/166	PLASTIC BAGS
8/166	CLOTH BAGS
2/166	POLY-FOIL BAGS
14/166	TIN/PLASTIC CONTAINERS
SEE BELOW	OTHER (please specify)

(cellophane bag, cardboard boxes, plastic freezer box)

ARE THESE CONTAINERS FOR THE INDIVIDUAL SAMPLES:

113/158	CLOSED (not airtight)
26/158	SEALED (relatively airtight)
2/158	LEFT OPEN
47/158	PLACED INSIDE SOME LARGER CONTAINER (e.g., a file cabinet)

* ARE STORED SEEDS PLACED IN SOME TYPE OF CONTROLLED ENVIRONMENT?

73 NO 85 YES

IF YES PLEASE RESPOND TO THE FOLLOWING:

WHAT DOES "CONTROLLED ENVIRONMENT" MEAN AT YOUR LAB?
(mark all appropriate responses)

79/85	TEMPERATURE CONTROL
47/85	HUMIDITY CONTROL
69/85	INSECT/RODENT CONTROL
7/85	FUNGAL CONTROL
_____	OTHER (please specify)

* **OF THE LABS TESTING OFFICIALLY DRAWN SAMPLES,** DURING NON-OPERATIONAL HOURS (NIGHTS, HOLIDAYS, WEEKENDS) FOR THE SEED LABORATORY, ARE THE OFFICIAL SAMPLES STORED UNDER RELATIVE TAMPER PROOF CONDITIONS SUCH AS LOCKED CABINETS, DRAWERS, OR STORAGE ROOM?

__24__ NO __27__ YES

* PLACE AN "X" ON THE TEMPERATURE/HUMIDITY CONTINUUM THAT REPRESENTS YOUR CURRENT STORAGE FACILITIES.

TEMPERATURE (°F)

0-----10-----20-----30-----40-----50--**X**---60-----70-----80-----90-----100

(AVE. TEMP = 54 °F)

RELATIVE HUMIDITY (%)

0-----10-----20-----30-----40--**X**---50-----60-----70-----80-----90-----100

(AVE. HUMIDITY = 43 %)

TEMPERATURE (°F)

NO. RESPONSES	TEMPERATURE °F)
37	N/A
1	10
3	35
8	40-49
29	50-59
31	60-69
47	70-79
2	80-85

HUMIDITY (%)

NO. RESPONSES	% HUMIDITY
70	N/A
5	10-19
15	20-29
12	30-39
21	40-49
24	50-59
6	60-69
3	70-79
2	>= 80

ACKNOWLEDGEMENTS

The authors wish to thank Mr. Tim Gutormson, Manager, Iowa State University Seed Lab, for the help and guidance that he provided. Also, thanks is given to Dr. Manjit Misra, Director, Iowa State University Seed Science Center, for funding the project.

HARRY L. SMITH
(1922 - 1993)

Harry was born in the small town of Ridgeway, Virginia, which is south of Martinsville and just 3 miles north of the North Carolina border. He graduated from Martinsville High School in 1940, and held various jobs while waiting to be inducted into the Navy. He served throughout the duration of WWII, mostly aboard a battleship, seeing action in both the Atlantic Ocean and the North Sea. His battle group was assigned to escort troop carriers in the European theater. When the war ended in Europe, his ship was ordered to the South Pacific, but Japan surrendered while he was in transit.

Harry enrolled at Virginia Polytechnic Institute (now Virginia Polytechnic Institute and State University) in the fall of 1947. He graduated with a B S Degree in Agriculture Education in 1951. Harry taught school for one year, and during the summer of 1952 he worked part-time in the Virginia State Seed Laboratory. He had every intention of returning to teaching in the fall, but was persuaded to continue his employment with the Seed Laboratory. He was employed as a Seed Analyst Trainee late in 1952. For the next several years he trained under Jennie Jones, then was promoted to Seed Analyst In Charge of Special Techniques. Later he became Seed Analyst Supervisor and then Seed Laboratory Supervisor.

Very early in his career, Harry became active in AOSA and was recognized nationally by his peers and seed trade colleagues as an expert in seed science and technology, and in the identification of plants and plant material. Harry devoted his entire career, and much of his private life, to methods and techniques of seed testing.

Harry held major offices in AOSA: to include; President, Vice-President, Chairman of the Merit Award Committee, Secretary-Treasurer, and also as AOSA Representative to the International Seed Testing Association, Munich, Germany, in 1965. As Chairman of the Rules Committee, he made substantial contributions to the AOSA Rules. Harry devoted significant time and effort during his career to collaborative studies on methods of testing with other states and the federal government, as well as developing standardized methods of seed testing.
He frequently assisted the Federal Seed Testing Laboratory on laboratory procedures of those kinds common to Virginia, and was recognized for his extraordinary expertise.

Harry acquired a distinguished reputation for being a self-developed botanist and was frequently asked to identify plants and plant material by law enforcement agencies. His quiet and unselfish mannerism gained the respect and confidence of his fellow employees, seed analysts, botanists and others in seed production and seed commerce, as well as in the Cooperative Extension Service.

Harry was the author or co-author of various articles published in the AOSA Newsletter and/or Proceedings, as follows:

1. *Discoloration of Seed Coats in Soybeans*
2. *Johnsongrass-Sorghum Hybrids Presence Problem in Virginia*
3. *The Appearance of a New Weed, Colepino Irregularis in Virginia*
4. *Germination of a Laboratory Sample of White Sweet Clover over a forty-two year period*
5. *Germination of "Skinned" Peanut Seed*
6. *Germination of Peanut Seed Harvested by Different Methods*
7. *Predrying as a Method of Overcoming Dormancy in Virginia Runner Type Peanuts*
8. *Artificial Drying vs. Field Dried Peanut Seed*
9. *Field Emergence of "Skinned" Peanut Seed*
10. *Laboratory Germination vs. Field Emergence of Peanut Seed*
11. *The Effect on Germination of Holding Treated Virginia Type Peanut Seed One Week Before Germinating*
12. *Caryopsis of Zoysia Matella and Bermudagrass*
13. *Comparison of Germination of Peanut Seed in Rolled Towels, Soil and Field*
14. *Ethrel vs. Predrying for Testing Peanuts*
15. *Checking Varieties of Oats, Barley and Soybeans by Laboratory and Field Test*

Harry retired from the Virginia Seed Laboratory in December 1987. He continued to help other people, just as he had enjoyed doing when employed in the Seed Laboratory. He volunteered one day a week to a local Health Care Unit, one day a week to the Lewis Ginter Botanical Gardens, and one-half day a week to the Cooperative Extension Office. In fact, at the time of his death he was pruning a neighbor's apple tree.

He will be missed by all who knew him, but not forgotten. Harry had three children and 2 grandchildren. His wife, Helen's, address is Route 8, Box 915, Ashland, Virginia 23005.

LOWELL W. WOODSTOCK
In Memoriam

Lowell W. Woodstock, 62, retired U.S. Department of Agriculture research plant physiologist, died February 13, 1994, of cardio-vascular disease.

Dr. Woodstock, who lived in Silver Spring, Maryland, was born in Harvey, Illinois. He graduated from the University of Illinois and received a doctorate in plant physiology from the University of Wisconsin. In 1963, he joined the staff of the Seed Research Laboratory at the Beltsville Agricultural Research Center.

His research involved various aspects of seed vigor. As chairman of the AOSA Vigor Committee, he published the Progress Report on the Seed Vigor Testing Handbook as a special issue of the AOSA Newsletter in April 1976. Dr. Woodstock was a member of the Vigour Test Committee of the International Seed Testing Association in the 1970's and served as vice-chairman from 1974-1980. He was also a member of the Society of Plant Physiologists. He retired from USDA in 1988.

Dr. Woodstock was a member of the Friends Meeting in Adelphi, Maryland, where he had worked on gun control issues.

Survivors include his wife, Agnes Woodstock of Silver Spring, Maryland; two daughters, Elizabeth Woodstock of Check, Virginia, and Louise Woodstock of New York; a sister, Sally Swanson of Phoenix; and a grandson.

ANNOUNCEMENTS

AASCO Annual Meeting

The AASCO (Association of American Seed Control Officials) Annual Meeting will be held July 24-28, 1994, at the beautiful *Red Lion - Riverside Hotel* located on the banks of the Boise River. For hotel reservations contact: *Red Lion - Riverside Hotel* at (208) 343-1871 and refer to the AASCO meeting. For information contact: Richard Lawson, Idaho Department of Agriculture at (208) 334-2368.

NEW MANAGER NAMED FOR ISU SEED TESTING LAB

AMES, Iowa -- The Seed Science Center at Iowa State University has named a new manager for its seed testing laboratory.

Susana Goggi began her duties in February. She oversees daily operations of the laboratory located in ISU's Seed Science Center. More than 50,000 samples from 300 species are tested at the lab each year. The tests help growers determine the quality and health of their seed and meet state, federal and international regulations.

The lab holds annual training workshops for seed industry professionals from around the country and the world. Lab personnel also collaborate with ISU researchers on solving practical problems of seed growers.

Goggi was previously the co-leader of the sorghum and millet breeding program at Mississippi State University. She also has worked with INTSORMIL, and international sorghum and millet research and support program, and served as a consultant on seed-related problems for industry and academia.

A native of Argentina, Goggi has a bachelor's degree in agronomy from the University of Buenos Aires, and a master's degree and doctorate in seed science and technology from Mississippi State University.

Position Available

MANAGER, MONTANA STATE SEED TESTING LABORATORY
Plant, Soil and Environmental Sciences
Montana State University

Non-tenure track, professional position supervising the analyses of seed samples, available July 1, 1994. Required: B.S. degree in Agronomy, Crop Science or related field, certified for germination and purity analysis by the AOSA, understanding of Federal Seed Act and AOSA, Rules for Testing Seeds, and experience using a computerized database management system. Before applying applicants MUST request a complete vacancy announcement from Peggy Humphrey, Plant, Soil and Environmental Sciences, Montana State University, Bozeman, MT 59717-0312; Tel (406) 994-4601; E-Mail ASSPH@MSU.OSCS.MONTANA.EDU. Screening begins May 20, 1994. NO FAX APPLICATIONS. ADA/EO/AA/Vet.Pref.

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DEADLINES

September Issue . . . . . August 10, 1994

February Issue . . . . . January 5, 1995

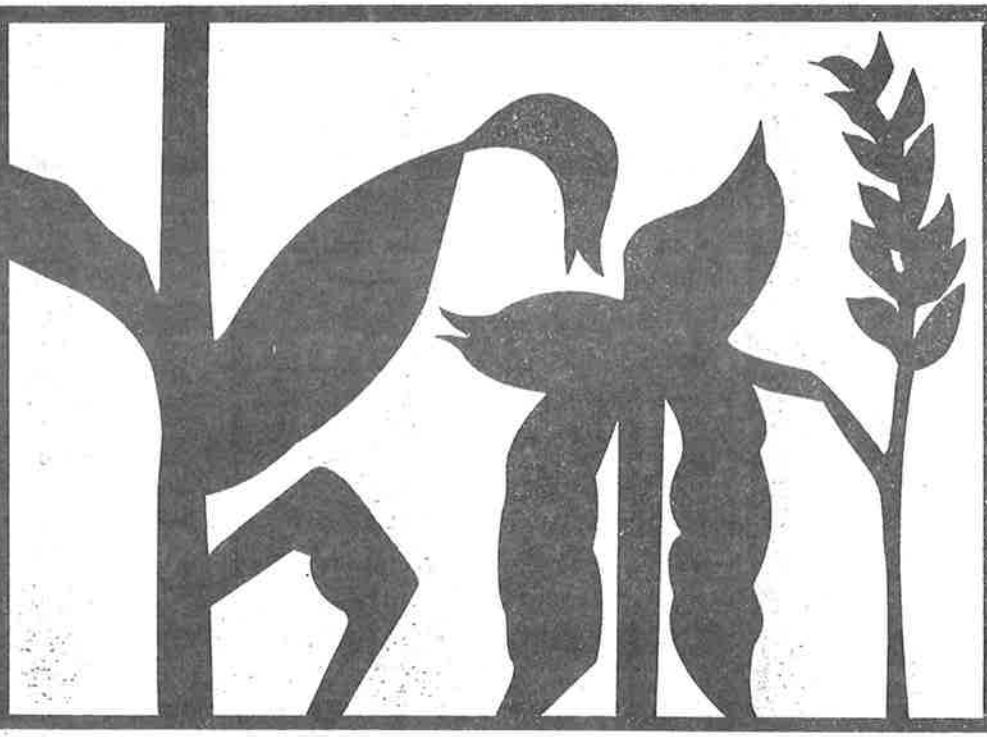
A note from the editor:

One of my goals is to make sure this issue and subsequent issues are printed and sent out on time. Another goal is to improve print or letter quality of the contents. I would request your help in this second goal by sending to me your articles ready to print (8.5" x 11" format - 1 inch margins) or a hardcopy and your article on a 3.5" disk in Wordperfect 5.1. I use an IBM compatible computer and a HP Laserjet 4. If you have any suggestions for improvement, send them to me or call me. My office number is 605-688-4590.

E. Brent Turnipseed, Editor

1994

SEED QUALITY WORKSHOPS
SEED CONDITIONING WORKSHOPS
GRAVITY TABLE WORKSHOPS



SEED SCIENCE CENTER
AGRICULTURAL AND BIOSYSTEMS ENGINEERING
SEED TESTING LABORATORY
IOWA STATE UNIVERSITY EXTENSION

SPONSORS

IOWA STATE UNIVERSITY
AMES, IOWA

1994 PROGRAMS

LOCATION

The workshops will be held in the Seed Science Center on the Iowa State University campus. Parking is available nearby. A map and parking permit will be sent with your registration confirmation.

SCHEDULE

Schedule for all workshops —

8:00 am - 8:30 am	Registration
8:30 am - 4:30 pm	Workshops

(Lunch on your own)

REGISTRATION

The registration fee for the Corn and Soybean Quality Workshops and Gravity Table is $45, and the fee for the Seed Conditioning Workshops is $90. Since enrollment is limited for these workshops, it is recommended that you register as early as possible. Registration will be accepted on a first-come, fees-paid basis. The coordinator of the workshops reserves the right to limit the number of persons attending per company or institution. Questions about registration should be directed to Carole Seifert, Iowa State University, Continuing Education, 102 Scheman Building, Ames, Iowa 50011-1112, (515) 294-1400. To register via FAX, transmit completed registration form and credit card information to (515) 294-6223.

CANCELLATIONS AND REFUNDS

Cancellations made at least one week in advance of the meeting will receive full refunds. Cancellations made within one week will be subject to a $20 handling fee. Any cancellations made the day of or after the start of the workshop will not be refunded.

LODGING

Rooms are available at the Ramada Inn and Budgetel in Ames. Please make your own reservations as soon as possible, but not later than three weeks before your conference. Call the Ramada at (515) 232-3410 or the Budgetel at (515) 296-2500. Be sure to indicate the name of your conference when making a reservation.

ON-LOCATION WORKSHOPS

Special arrangements can be made for the workshops to be held on location at your plant or place of operation if four or more employees are involved. Contact Dr. Manjit Misra at (515) 294-6821 for details.

FOR FURTHER INFORMATION, CONTACT

Connie Sandve
Iowa State University
125 Seed Science Center
Ames, Iowa 50011-3228
(515) 294-6821

And Justice for All...
Appointment, promotion, admission and programs at Iowa State University are administered equally to all without regard to race, color, sex, national origin, disability or age. Call the Affirmative Action Office at (515) 294-7612 to report discrimination.

WHO SHOULD ATTEND
1. Seed Analysts
2. Quality Assurance Managers
3. RST Trainees
4. Production Managers
5. Seed Health Lab Technicians
6. Field Production Personnel
7. Ag Journalists
8. Interested Personnel

WHO SHOULD ATTEND
1. Conditioning Machine Operators
2. Quality Assurance Managers
3. Production Personnel
4. Seed Plant Management
5. Equipment Representatives
6. Interested Personnel

WHO SHOULD ATTEND
1. Gravity Table Operators
2. Quality Assurance Managers
3. Plant Managers
4. Equipment Representatives
5. Interested Personnel

- **Seed Corn Quality Evaluation**

May 18 and May 26, 1994

- **Soybean Quality Evaluation**

June 28 and August 17, 1994

Quality Evaluation Workshops offer lectures and laboratory hands-on sessions for both corn and soybeans on the following topics:

1. Seed and seedling morphology
2. AOSA and ISTA (corn only) standard germination tests using four methods:
   - Rolled towel
   - Crepe cellulose
   - Sand
   - Deep Sand
3. Accelerated aging test
4. Tetrazolium test
5. Cold test
6. Electrical conductivity (single seed and bulk methods)
7. Blotter health test with fungi identification

In addition, corn quality evaluations will feature the fast green test. Soybean quality evaluations will offer the pod, chlorox soak, and peroxidase tests.

- **Seed Corn Conditioning**

May 19-20 and May 24-25, 1994

- **Soybean Conditioning***

June 29-30 and August 18-19, 1994

Conditioning Workshops offer hands-on training with equipment and in-depth discussion on all aspects of conditioning. The workshops will include topics on harvesting, sorting, drying, precleaning, bulk handling, cleaning, sizing, upgrading, treating, bagging, and storage. For hands-on training, the participants will work in small groups with air-screen cleaner, spirals, gravity tables, aspirator, sizers, treater, and bag closing machine. A session on the basics of design and layout of a seed plant is planned in each workshop.

*Some aspects of wheat and oats conditioning will be covered in Soyean Conditioning workshops.

- **Gravity Table Workshops**

September 1, 7 and 9, 1994

The *Gravity Table Workshops* will focus on the adjustment, operation, and effectiveness of the gravity table for upgrading seed quality. Hands-on training will be provided with both Forsberg, Oliver, and LMC gravity tables.

Seed corn and soybeans will be run through each of the gravity tables. Research information on cleaning difficult weeds by a gravity table will be presented.

The procedure for analyzing the output of the gravity table will be discussed.

Registration Form (Only one registration per form - Please duplicate for additional registrations)

SEED QUALITY WORKSHOPS • GRAVITY TABLE WORKSHOPS SEED CONDITIONING WORKSHOPS FOR 1994

SEED SCIENCE CENTER • IOWA STATE UNIVERSITY, AMES, IOWA

(All May workshop registrations are due 5/1/94; others are due 6/26/94.)

1. Registration Information*:

First Name Last Name

Company/Affiliation

Social Security Number Work Telephone FAX Telephone

Street Address

City State Zip Code

2. Registration Fees: Please check the session(s) you plan to attend.

Fee Type:			
❑	Seed Corn Quality Evaluation	May 18, 1994	$45
❑	Seed Corn Conditioning	May 19-20, 1994	$90
❑	Seed Corn Conditioning	May 24-25, 1994	$90
❑	Seed Corn Quality Evaluation	May 26, 1994	~~$90~~ $45
❑	Soybean Quality Evaluation	June 28, 1994	$45
❑	Soybean Conditioning	June 29-30, 1994	$90
❑	Soybean Quality Evaluation	August 17, 1994	$45
❑	Soybean Conditioning	August 18-19, 1994	$90
❑	Gravity Table Workshops	September 1, 1994	$45
❑	Gravity Table Workshops	September 7, 1994	$45
❑	Gravity Table Workshops	September 9, 1994	$45

3. Method of Payment:

❑ Check (Payable to Iowa State University)**

❑ Visa ❑ MasterCard ❑ Discover

Cardholder Name _____ Signature _____

Exp. Date Mo Yr Card Number

** $15 charge for all returned checks

4. Disability?

❑ Check this box if you have a disability and may require accommodation in order to fully participate in this program. We will contact you at the work telephone listed above to discuss your specific needs.

5. Mail or FAX:

Please mail the completed form with fee to:

Carole Seifert
Iowa State University
Continuing Education
102 Scheman Building
Ames, Iowa 50011-1112

or

FAX to **(515) 294-6223**

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IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

* Iowa State University requests this information for the purpose of preregistering you in a conference. No one outside the university, with the exception of participants in this conference, is routinely provided this information. If you fail to provide the required information, we cannot promise accurate registration. (Reference: Iowa Code, Chapter 22.11; Iowa Fair Information Practices Act.)

Please route to:

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We sometimes use mail lists maintained by others which cannot be checked against our files. Should you receive extra copies,

Carole Seifert
Iowa State University
Continuing Education
102 Scheman Building
Ames, Iowa 50011-1112
P300-1789

FORWARDING AND ADDRESS CORRECTION REQUESTED

Book News Book News

University Press of Kansas 2501 West 15th Lawrence KS 66049-3904 (913) 864-4155 Fax (913) 864-4586

Contact: Susan Schott

Weed Seeds of the Great Plains

A Handbook for Identification

Linda W. Davis

Seeds, as small and unobtrusive as they seem, are an essential part of the life cycle of plants. In addition, they are useful for identification of plants and, in fact, are often superior for that purpose than other parts of a plant.

That's because seeds have distinctive characteristics, tend to outlast all other plant parts, and vary little within a species—unlike other parts such as leaves.

Since weeds interfere with the growth, harvesting, and quality of crops, Linda Davis says, the ability to identify weed seeds before they are inadvertently planted affords an economic advantage. Other weed-control measures—herbicides and mechanical removal of unwanted plants—are enormously costly in comparison.

Lavishly illustrated with more than 600 photographs and drawings, this handbook provides information about the seeds of 280 species of weedy plants of the Great Plains, including ones commonly found in crops, rangeland, lawns, and along roadsides.

This is the only book available that covers a large number of Great Plains plants. For each species it provides a high-quality color photograph showing minute details, a black-and-white life-size silhouette (against which actual seeds can be compared), and a full description. An easy-to-use set of finding lists facilitates identification of unknown seeds. Both scientific and common names are used throughout, and an illustrated glossary clarifies technical terms.

"Among the most beautiful and simultaneously useful books on the topic. Plant seeds are not easy to identify, especially for those untutored in the mysteries, and this book

will certainly help all but the hopelessly timid."—Robert B. Kaul, contributor to *Flora of the Great Plains.*

"Unsurpassed photos. This is a case where a good picture is worth more than many words."—Duane Isely, author of *Seed Analysis* and *Weed Identification and Control.*

Linda W. Davis is an instructor in biology at Kansas State University.

Published for the Cooperative Extension Service of Kansas State University by the University Press of Kansas.

Weed Seeds of the Great Plains is available through bookstores or may be ordered direct from the University Press of Kansas, 2501 West 15th Street, Lawrence, Kansas 66049, 913-864-4155. The price is $25.00 (plus $3.00 shipping and handling when ordering from the press).

Publication date: October 12, 1993
208 pages, 600 illustrations including 286 color photographs
Cloth ISBN 0-7006-0651-3, $25.00

AOSA SOLICITS RESEARCH PROPOSALS
to Study
SEED GERMINATION AND DORMANCY

The Association of Official Seed Analysts (AOSA) is soliciting research proposals by May 20, 1994, to support investigations of seed germination and dormancy. The primary reason for this research funding is to improve seed testing by the promotion of uniform laboratory methods and practices through seed research. The AOSA has identified Seed Germination and Dormancy as the principle area of concern for this funding cycle. Specific crop and plant species which have been identified as high priority include; rangegrasses, soybean, wild flowers, sweet corn (SH_2), and field grasses. Proposals relating directly to seed germination and dormancy of these species or any other crop or plant species commonly tested in seed laboratories in North America will be accepted.

Research proposals will be accepted for investigations which cover a one to three year period, however funding will only be approved on an annual basis (July 1 to June 30). Present funding limits the annual financial support for these proposals to $3,000 to $5,000 per year. Ten copies of all proposals (5 pages maximum) must be submitted by May 20, 1994, to:

Dr. Nancy J. Vivrette, Chairman
AOSA Seed Testing Standardization Research Funding Committee
Ransom Seed Laboratory
P.O. Box 300
Carpinteria, CA 93014-0300

Specific guidelines to be followed when developing proposals are listed below. If you have questions pertaining to this request for proposals do not hesitate to contact:

Nancy J. Vivrette
Phone: (805) 684-3427
FAX: (805) 684-4157

GUIDELINES FOR AOSA SEED RESEARCH PROPOSAL

A. Title Page
   1. Concise descriptive title (100 characters or less)
   2. Name of the organization submitting the proposal
   3. Name, title, full mailing address and telephone number of the principal investigator and/or investigators
   4. Proposed project starting date, duration and total cost

B. Overall Aim and Specific Objectives - This should be a concise statement of what you will actually do and why. It should not exceed one paragraph. Leave more detailed, context-setting to the "Background" section.

C. Relevance to Seed Testing/Technology - Discuss the relevance of this work to seed testing/technology. What differences will it make? How does it relate to the established research priorities? Discuss the potential for effective utilization of the results for the benefit of seed testing.

D. Innovative Aspects - Provide a brief statement describing the innovations of the proposed research, how it may improve an existing situation, how it relates to the state-of-the-art or develops new technology. Comparisons of methods among laboratories are generally not acceptable since these can generally be handled through the referee format.

E. Background and Rationale - Provide a substantive rationale for the proposed research. Explain the existing problem, the status of previous efforts to solve it, and the logic behind your new approach. Spell out your assumptions, theories, and research hypotheses; address the likelihood of success. Include a brief but complete literature review if appropriate. If you must cite unpublished work, please enclose copies.

F. Technical Work Plan - Describe in detail your experimental design (including any statistical issues) and research protocols (including any special techniques). Provide an estimated time schedule for meeting the research objectives.

G. Staff and Resources - List all investigators essential to the project and describe the institutional facilities and resources available for the proposed research.

H. Budget Information - Provide a full, detailed, justified budget for each year of the proposed project plus appropriate totals. Travel and training must be directly related to the research.
Itemize:
1. salaries
2. equipment
3. materials and supplies
4. training (purpose, duration, when, where)
5. consultation (topic, amount, rate)
6. travel (purpose, duration, when, where)
7. other costs

I. Submission of Proposals (Not to exceed 5 pages)

1. Submit one (1) original and ten (10) copies to

   Dr. Nancy J. Vivrette, Chairman
   AOSA Seed Testing Standardization Research Funding Committee
   Ransom Seed Laboratory
   P. O. Box 300
   Carpinteria, CA 93014-0300

2. The deadline for receiving grant proposals is May 20, 1994, and investigators awarded grants will be notified before July 1, 1994. Grants will be funded on a fiscal year basis from July 1 to June 30.

J. Selection of Proposals for Funding

1. The proposals will be evaluated utilizing the following criteria:

   a. Scientific and technical quality of the proposal
   b. Scientific validity and quality of research approach
   c. Relevance of proposed research to seed germination and dormancy
   d. Feasibility of attaining objectives during proposed time period
   e. Adequacy of professional training or research experience of investigators

K. Reporting Requirements

1. Progress Reporting - A reporting schedule for major progress reviews will be developed based on the projected time requirements indicated in the original research proposal and the major developmental stages of the research. Additionally, an annual progress report form will be made available to be completed two (2) months prior to the annual AOSA meeting.

2. Final Report - The general format of the final report will be established at the project's beginning. The format and approach will depend upon the nature of the project. The final report shall be prepared in a publication format to document the entire effort. Reports shall be published for the AOSA membership in either the AOSA Newsletter or the Journal of Seed Technology. When handbooks or other reference materials logically result from research projects, this will not preclude a report in the AOSA Newsletter even if this report simply states that such material is being developed.