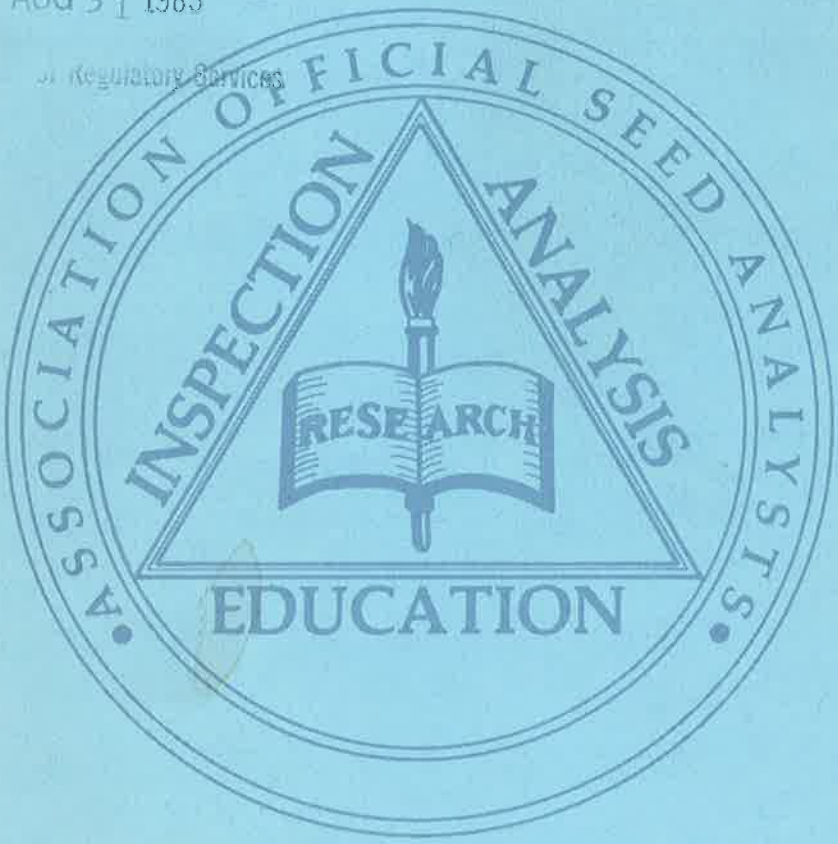
ISSN: 0146-3071

JOURNAL OF SEED TECHNOLOGY

Volume 7 1982 Number 1



JOURNAL OF SEED TECHNOLOGY

Volume 7 ● Number 1

1982

Published by the

Association of Official Seed Analysts

L. O. Copeland, Editor
Dept. of Crop and Soil Sciences
Michigan State University
East Lansing, MI 48824

R. W. Yaklich, Associate Editor
Seed Research Laboratory
SEA-USDA
Building No. 006
Beltsville, MD 20705

Stone Printing Company
Lansing, Michigan

SUGGESTIONS TO CONTRIBUTORS TO THE JOURNAL OF SEED TECHNOLOGY

General Requirements. Articles should be original reports covering some area of seed science and technology not previously or simultaneously published in any other scientific or technical journal. Three kinds of articles may be considered for publication: (1) research papers, (2) brief communications covering new techniques or developments, and (3) review articles by special arrangement with the editor.

Page Charges. Eight pages of each article accepted will be printed free of charge. Page charges in excess of eight pages will be based on the actual printing costs.

Manuscripts. The manuscript must be typed on good-grade bond paper approximately 21 x 28 cm. The lines of type must be numbered on each page. Two carbon or xeroxed copies, also on line-numbered paper, are required. The entire manuscript must be double spaced. Each table must be typed on a separate sheet. An Abstract and list of Additional Index Words must be included at the beginning.

Order. Assemble the manuscript in the following order: Title (no separate title page), Author(s), Abstract, Additional Index Words, Text, Literature Cited (begin on a new page), Tables, Captions for Figures (begin on a new page), and Figures. Although the text is most commonly divided into the following sections: Introduction, Materials and Methods, Results and Discussion, and Acknowledgements, the specific arrangement for articles submitted to the *Journal of Seed Technology* will vary. Place headings in the center of the page and capitalize throughout. Begin the subsection headings at the left hand margin (do not indent), capitalize the first letter, underline, and follow with a period. Begin the first sentence on the following line with the first word indented five spaces. Do not include a summary or list of conclusions.

Numbers. Use arabic numerals for all numbers with two or more digits and for all measurements such as time, weight, or degrees except when the number is the first word in a sentence. Spell out numbers when they are the first word in a sentence or when they are less than 10 and not measurements, except when in a series in which one figure has two or more digits.

Author(s). Place the name(s) of the author(s) in full caps below the title and footnote with a superscript arabic two (2). In listing the authors, do not leave a space between the period after each initial and the next letter. Give the place where the study was conducted and the title and address including the zip code of each author in footnote two at the bottom of the page.

Footnotes. Footnotes are *numbered* consecutively and typed at the bottom of the pages. Number 1 should contain identification of the article or research project. It includes the "date received" supplied by the editor. Number 2 identifies the author(s).

Tables. Tables are numbered consecutively. Use the following symbols for footnotes, in this order: a, b, c, d, etc. Use asterisks (*, **, etc.) to indicate statistical significance (5%, 1%, etc.). Do not duplicate matter that is presented in charts or graphs.

Figures. Photographs for half-tone reproduction should be glossy prints with good dark and light contrast. Prepare drawings for graphs and charts with India ink on white drawing paper or blue tracing cloth. Typewritten matter should be avoided on graphs and charts. Label each figure with name of author, title of author, and number of figure. Do not use figures which duplicate matter presented in tables.

Style Manual. The *Style Manual for Biological Journals* prepared by the Committe on Form and Style of the Council of Biology Editors and published by the American Institute of Biological Sciences (AIBS) shall be followed for writing papers submitted to the *Journal of Seed Technology*.

Abbreviations. Use standard abbreviations listed in the AIBS Style Manual without definition. Other abbreviations should be defined at first usage and may be used thereafter without further definition. State names should be abbreviated following city names, using the two letter abbreviations of the U.S. Post Office Department.

Nomenclature. The Latin binomial or trinomial and authority must be shown for all plants, insects, and pathogens at first listing) In title, abstract, or text). Crop varieties should be identified by single quotations marks at first listing only, e.g., 'Ranger' alfalfa (*Medicago sativa* L.) or *Medicago sativa* L. 'Ranger'; *Bothriochloa ischaemum* var. *songarica* (Rupr.) cel. et Harl, 'King Ranch.'

Units of Measure. Metric units must be used for all measurements.

References. All citations whether to published literature or to unpublished work are to be listed alphabetically by senior authors at the end of the manuscript. Citations to published works should include names of all authors, the year, complete title, publication, volume number, and inclusive pages, as appropriate.

Subscription Information

Subscription information to the *Journal of Seed Technology (JOST)* may be obtained by writing to the Secretary-Treasurer, Association of Official Seed Analysts (AOSA). Back issues to the *JOST*, as well as other AOSA publications are also available.

Mr. Robert Trent
Secretary-Treasurer
Association of Official Seed Analysts

2240 Kellogg Lane
Boise, Idaho 83702

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D. F. Grabe, Chairperson

F. Bonner

P. C. Stanwood

Auditing

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C. Sciple

A. Knapp

MINUTES OF THE ASSOCIATION OF OFFICIAL SEED ANALYSTS MEETING

Seventy-Second Annual Meeting

Corpus Christi, Texas

June 19-25, 1982

EXECUTIVE BOARD MEETING

June 19, 1982

President Wiesner called the meeting to order at 9:00 A.M.

Members Present	*Others Present*
C. C. Baskin	R. Danielson
S. Dobbins	E. Hardin
C. C. Abbott	W. Ditmer
A. B. Ednie	F. W. S. Dale
L. O. Copeland	L. Bass
T. Turner	J. Lair
G. Fendersen	D. Lambert
	R. Trent

President Wiesner advised that Ed Hardin had been appointed to fill a vacancy on the Executive Committee. He asked if there were any other items that should be added to the agenda. Several items related to seed testing were added.

Minutes of the 1981 meeting were approved as printed in the AOSA Newsletter, motion carried.

Wiesner called for old business. The archives at the Iowa State University Library were discussed. No progress has been made in communicating with ISU. A report was to be made later by Allen Knapp.

Wiesner appointed a Resolutions Committee; Miller McDonald (chairperson), Jim Lair and J. C. DeLouche and an Auditing Committee; Robert Trent, chairperson, Charles Scriple and Allen Knapp.

A resolution was suggested to NASDA for more understanding of our meeting length of time, purpose and to allow members to attend on official time even when their expenses cannot be paid.

The possibility of having a program format was discussed before the meeting so that members needing to do so could have this to justify attendance.

Wiesner gave the President's report, Fenderson the Vice President's report and Baskins gave the Secretary-Treasurer's reports. All reports were accepted.

Copeland gave the Editorial Committee report. The revised rules have been designated Volume 6 No. 2, a change from Volume 3 No. 3. An index for the Journal has been printed and designated as Volume 6 No. 1. These designations of Volume and Numbers prompted considerable discussion. Two more issues of the Journal 1981 will be printed. Whether these should be Volume 6 Nos. 3 and 4 or what should they be was the point of discussion. Fenderson moved, seconded by Lair that the rules remain Volume 3 No. 3, 1978 and show date of revision on the title page. This would require reprinting and distributing the title page. Danielson pointed out that this would be very unprofessional. The motion was withdrawn. The Editorial Committee will make a recommendation later in the week on the matter.

Hardin moved, seconded by Dobbins that the price of revised rules be set at $12.00 per copy without the cover, motion carried.

Contribution No. 26 to the handbook on seed testing "Microbiological Assay of Fungicide — Treated Seeds" has been revised and reprinted. Fenderson moved, seconded by Hardin that the price of this publication be set at $2.50, motion carried.

A proposal from a private company to assume publication of the Journal of Seed Technology was discussed. Hardin moved, seconded by Fenderson to keep the publication of the Journal as is. Motion carried.

Ednie discussed exchange of Newsletters with ISTA. The agreement signed in 1972 was reviewed.

Ditmer gave a report on the Newsletter and recommended publication of an index this year after the printing of Volume 56 No. 3. Barbara Ditmer has been maintaining the necessary information. Hardin moved, seconded by Fenderson that the index be printed and that Barbara be appropriately compensated for her work, motion carried. Fenderson moved, seconded by Lair that an index for the Journal and Newsletter be printed every five years, motion carried.

Abbott moved, seconded by Dobbins that the newsletter index be published as a separate number of the appropriate volume, motion carried. Ednie moved, seconded by Fenderson that Barbara Ditmer's offer to continue maintaining information for indexing the newsletter be accepted and that she be appropriately compensated for her work, motion carried.

Wiesner read a letter from Richard Payne about the cultivar purity testing handbook, suggesting that a progress report be published as an issue of the newsletter. Ernie moved, seconded by Fenderson that this recommendation of the Cultivar Purity Subcommittee be accepted, motion carried.

Danielson raised the question of the status of the handbook sections as they relate to the rules. Do handbook sections have rule status? After discussion, Wiesner instructed the Rules Committee to develop a recommendation to be circulated to the Executive Committee and if approved by them to be published in the newsletter 90 days before the next meeting so that it might be voted on at next year's meeting by the membership.

Wiesner read a letter from the University of Wisconsin requesting a list of journal subscribers so that they may be contacted about subscribing to the University publication "Restoration and Management Notes." Hardin moved, seconded by Lair that the list be sent, motion carried.

Fenderson gave the Membership Committee report. The following were nominated for honorary membership; Clifford Christianson, Bill Dale, Wendell Ditmer, Milton Meadows, and Dr. William Rice. Associate membership; James Bruce, Julio Marcos Filho, Alan J. Galbreath, Robert E. Lawson, Denis C. Magee, and Susan Ulmer Wallace. Membership for the Larimer County Voc-Tech Center at Fort Collins, CO, was not recommended because it does not qualify under the present constitution. Fenderson moved, seconded by Hardin that the recommendations of the committee be accepted, motion carried.

The following reports were made without comments: liaison, referee, and public service.

The Research Committee report was received. Danielson raised a question about seed counts, size of noxious weed seed samples and germination of Kentucky bluegrass. Hardin moved, seconded by Fenderson to reactivate the seed count subcommittee to investigate Section 2.4, Table 1 of the rules for discrepancies in sample size for purity and noxious weed seed sample as related to the 10 x rule, motion carried.

Danielson gave the Rules Committee report. Discussion followed about light as stated in the rules as a request of the Oklahoma Commission of Agriculture. Danielson recommended that the statement on light be revised and that a recommendation be made for incorporating this revision into the rules.

Doug Ashton is to replace Everson as chairman of the Seedling Evaluation subcommittee.

Apparent differences in ISTA-AOSA blowing samples for orchardgrass were discussed. Hardin moved, seconded by Dobbins that procedures for preparing blowing samples be published and that Everson be asked to compare AOSA-ISTA orchardgrass blowing point calibration samples, that he be reimbursed for his expenses and that the Rules Committee publish a statement in the AOSA Newsletter that the intent of the AOSA-ISTA calibration for establishing a blowing point was to produce comparable results, motion carried.

General seed blower now has a competitor, Boone seed blower and it is now being tested by Oregon State Seed Lab. There was no report from the Legislative Committee.

The following special committee reports were made: budget, constitution, merit award, nomination, C.A.S.T., program, teaching and training and journal indexing. The executive committee recommends that the constitution, with revisions to date, be reprinted and distributed to members and associate members.

SSB advisory report was made by Ditmer. He discussed USDA's future plans for the laboratory. Lambert elaborated on these plans, that the four regional USDA labs will be closed and that SSB will no longer be concerned with standardization as such, but primarily perform the duties performed by the regional labs.

Hardin moved, seconded by Ednie that the SSB Advisory Committee become the Seed Standardization Committee for the purpose of considering the feasibility of standardization work being done with AOSA. Motion carried.

The Resolutions Committee was instructed to draft a resolution to the Secretary of Agriculture, opposing the abolition of SSB and the regional seed control laboratories. Copies are to be sent to respective interested organizations and state departments of agriculture asking them to support the resolution.

The Meeting Place Committee recommended that invitations from Virginia for 1985 and Minnesota for 1986 be accepted. Fenderson moved, seconded by Abbott that these invitations be accepted, motion carried.

Wiesner read a letter from Delouche concerning the Symposium Committee. Copeland moved, seconded by Fenderson that all future symposiums be published in the Journal of Seed Technology, motion carried. A symposium next year is the responsibility of the Symposium Committee and program chairman.

Allen Knapp discussed the archives. He reviewed a letter from Stanley Yates, Iowa State University Library to LeRoy Everson concerning submitting materials for setting up a procedure for submitting materials. A. B. Ednie will give some guidelines to the committee.

Hardin gave the Certification of Analysts Committee report. The status of the committee's activities was discussed. Lair moved, seconded by Abbott, that the committee prepare the analysts exam and that it be given to the Executive Committee at next year's meeting as a "dry run." Motion carried.

Lambert gave the administration procedures handbook report. Summaries of the President's and vice President's duties have been completed. Lambert asked for a recommendation as to what extent the handbook

should be developed regarding committee chairman duties. Hardin moved, seconded by Lair that President, Vice President and Secretary duties be prepared and other duties developed by the committee as time permits and necessity dictates. Motion carried.

There were no reports from the necrology and nomenclature committees.

After the committee reports, Wiesner reviewed procedures for handling bluegrass blowing calibration samples adopted by the Executive Committee in 1977. Hardin moved, seconded by Lair that samples prepared by the seed standardization lab be checked against ISTA samples before distribution, and that results of this check be reported at the next Executive Committee meeting, then a decision be made on distribution. Motion carried.

Trent reviewed suggestions for a uniform purity report form. Danielson discussed some suggestions from ASTA regarding an all states noxious weed seed examination. Abbott moved, seconded by Dobbins that Fenderson deliver a statement to ASTA that AOSA labs would conduct "all states" noxious weed seed examinations on request. Motion carried.

Hardin moved, seconded by Ednie that Fenderson appoint a committee to study uniform purity report form and that this committee work jointly with SCST. Motion carried.

The committee discussed ryegrass labeling. Wiesner suggested that the legislative committee discuss the topic and make a recommendation to the Executive Committee for a resolution to ASTA at the Dallas meeting.

Danielson discussed coordination of AOSA and ISTA rules particularly in the area of purity analysis. Fenderson suggested that AOSA members involved in ISTA committees be combined into a committee to report to AOSA on ISTA committee activities.

Weisner discussed a request for AOSA to co-sponsor a national conference on "Computers in Agriculture Extension." No action was taken.

Hardin discussed encouraging graduate students to participate in AOSA conventions. Copeland moved, seconded by Lair that graduate students with interest in seed technology that are properly identified with a letter from their major professor be exempt from registration fees if this meets with SCST approval. Motion carried.

Meeting adjourned at 12:05 a.m.

C. C. Baskin, *Secretary-Treasurer*

SPECIAL EXECUTIVE BOARD MEETING

June 22, 1982

President Wiesner called the meeting to order.

Members Present	*Others Present*
C. C. Abbott	R. Trent
S. Dobbins	R. Danielson
G. Fenderson	J. Lair
R. K. Marx	E. Hardin
L. O. Copeland	G. Jenanyan
A. B. Ednie	
C. C. Baskin	

The numbering of the issues of the Journal, Volume 6 was discussed. The index in No. 1, revised rules No. 2. The decision was made to print Volume 6 No.'s 3 and 4. A letter will be sent to subscribers explaining why there are four issues of Volume 6 and that subsequent volumes will be only two issues.

Fenderson moved, seconded by Hardin that in the future, issues 1 and 2 of each volume of the Journal be reserved for the proceedings and scientific papers and that additional issues carry higher numbers, motion carried.

Baskin discussed the status of the Vigor Testing Handbook. Fenderson moved, seconded by Marx that the board approve printing the Vigor Testing Handbook upon final revisions by the Vigor Committee and that the board be notified when it goes to press. Motion carried.

Hardin moved, seconded by Dobbins that the price of the Vigor Testing Handbook be set at $20.00 with cover. Motion carried.

Copeland moved, seconded by Hardin that this handbook be copyrighted. Motion passed. Copeland will work with McDonald on this.

Dobbins discussed revision of boundaries of the AOSA referee regions to coincide with SCST regions. The new region arrangements are to be used informally in 1982-83. Changes in AOSA regions will require a change in the by-laws. The proposed realignment was referred to the Constitution Committee for study.

Shortening the time for AOSA meetings was discussed. Fenderson moved, seconded by Abbott that we continue to schedule the executive board meeting on Saturday. Motion carried.

Meeting was adjourned.

C. C. Baskin, *Secretary-Treasurer*

ASSOCIATION MEETING

June 24, 1982

President Weisner called the meeting to order.

The secretary called the roll; the following members and associate members were present:

STATE LABORATORIES — 30

Alabama
Alaska
California
Colorado
Delaware
Georgia
Illinois
Iowa-Ames
Kansas
Louisiana
Massachusetts
Mississippi (State)
Mississippi (Seed Tech.)
Missouri
Montana
Nebraska
Nevada
New Jersey
New Mexico
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
South Carolina
Texas
Vermont
Wisconsin
Wyoming

USDA LABORATORIES — 3

Eastern Tree Seed Laboratory, Macon, Georgia
National Seed Storage Laboratory, Fort Collins, Colorado
National Seed Standardization Laboratory, Beltsville, Maryland

CANADIAN LABORATORIES — 2

Seed Biology Laboratory, Ottawa, Ontario
Plant Products Laboratory, Toronto, Ontario

Other laboratories were represented at the meeting but representatives had to leave prior to the business meeting.

President Wiesner appointed Gail Fenderson parliamentarian.

Fenderson read the minutes of the two executive board meetings. Fenderson moved, Ditmer seconded that these reports be accepted. Bass moved to amend the motion for acceptance that the price of the Vigor Testing Handbook and exempting graduate students from registration fees be voted on separately. Delouche seconded the amendment, amendment carried. Motion carried. Bass suggested that students be charged a registration fee of $5 or $10. Delouche moved, seconded by Ditmer,

that all students with appropriate identification, i.e., a letter from a major professor or department head be exempt from registration fees and that the registration committee be responsible for determining appropriate identification. Motion carried. The price of the Vigor Testing Handbook was discussed. Fenderson moved, seconded by Hardin, that the price of Vigor Testing Handbook be $20 with cover. Motion carried.

The Secretary's report and Treasurer's report were made and accepted.

Allen Knapp gave the report of the audit committee. Report accepted.

The following standing committee reports were made and accepted:

Editorial, consisting of the Newsletter, Handbook editor, Science and Education editor, Journal Indexing, and Journal. Copeland discussed review articles for publishing in the Journal.

Legislative

Liaison

Membership, Fenderson moved, seconded by Bass that honorary and associate members be accepted.

Public Service

Referee

Rules, the following proposed changes were considered:

1. Revision of section 2.10a (8) to read:
   "Seed units with nematode galls or fungus bodies (Smut, ergot and other sclerotia) which are not entirely enclosed with the seed unit. Also included are ergot and smut-filled caryopses of Dallisgrass *(Paspalum notatum)* which are entirely enclosed within the seed unit. Refer to section 2. 7h. Danielson moved, seconded by Harry Smith that this change be approved, motion carried.
2. Delete reference to side oats gramma from section 2.7g (1) of the Rules.
   Add side oats gramma to section 2.7g (2) of the Rules.
   Add paragraph seven (7) to section 2.11d of the Rules. Parenthesis (7) will read:
   (7) Side-oats gramma: The setting for side-oats gramma shall be determined for the individual blower by multiplying the Kentucky bluegrass calibration setting by 1.480. Before blowing, extraneous material that will interfere with the blowing process shall be removed. The sample to be blown should be divided into four (4) approximately equal parts and each part blown separately. (The 1.480 factor is restricted to the General Seed Blower.)

Refer to AOSA Handbook No. 24 for required additional procedures to prevent bunching of the seeds during the blowing procedures."

Danielson moved, seconded by Lambert that this change be approved. Motion carried.

3. Change the germination methods for New Zealand spinach, Table 3, page 57 of the Rules to read:

Substrata	Temperature	First Count	Final Count	Specific Requirements	Fresh and Dormant Seed
RT	15;20	5	21	soak fruits overnight (16 hrs.), air dry 7 hrs.; plant in very wet towels. Do not re-water unless later counts exhibit drying out.	on 21st day scrape fruits and test for 7 additional days.

Danielson moved, seconded by Fenderson that this change be approved.

4. Delete reference to little bluestem from section 2.7g(1) of the Rules. Danielson moved seconded by Ditmer that this change be approved, motion carried.

The effective date for changes will be October 1, 1982.

The following Special Committee reports were made and accepted:

Budget

Constitution, the following changes were considered:

1. The secretary-treasurer be allowed to succeed himself. Ditmer moved, seconded by Bass to accept the change, motion carried unanimously.
2. The term of President be changed from one year to two years, Ditmer moved, seconded by Bass to accept the change. Fenderson spoke in opposition to the change, Larsen and Delouche spoke in favor of the change. A show of hands vote was 22 for, 12 against. Fenderson called for a roll call vote (vote is recorded on roll as called earlier) roll call was 18 for, 12 against, 1 abstaining. Motion failed for lack of 2/3 majority as required by the constitution.

SSB Advisory, this committee will not be continued. Ditmer will serve as chairman of the new Seed Standardization Committee.

Program

Necrology, a moment of silence was observed in memory of Ruby Crouley.

Merit Award, Arnold Larsen received the merit award.

Teaching and Training

C.A.S.T., several favorable comments were made concerning CAST.

Nomenclature

Administrative Procedures Handbook

Symposium, Larsen stated that Delouche was soliciting topics for the Ottawa meeting, one suggestion was AOSA-ISTA Rules Differences.

Meeting Place, meetings for 1983, Ottawa; 1984, Idaho; 1985, Virginia; 1986, Minnesota.

Resolutions, the following resolutions were passed:

1. Commending Texas for an excellent meeting.
2. To NASDA requesting that members be allowed to attend on official time even if expenses can't be paid.
3. To Secretary of Agriculture opposing abolition of Seed Standardization Branch.

Seed Analysts Accreditation

President Wiesner called for old business. He reminded the group of the Laboratory Accreditation and Ryegrass Committee reports that had been tabled at previous meetings.

President Wiesner called for new business. Allen Knapp discussed the rules change that had been accepted earlier concerning ergotized blue grass. The parliamentarian ruled that rule changes had been accepted. and that no further action be taken at this time.

Bass noted that the effective date for rule changes could be changed from October 1. Danielson commented on the situation. There was no other new business.

Ed Hardin's report of the nominating committee was accepted, officers and board members are as follows:

Executive Committese for 3 years — Dave Svik, Russell Ruud

Secretary-Treasurer — Robert Trent

Vice President — Roger Danielson.

Wiesner passed the gavel to Fenderson, the new president, who announced committee chairmen appointments. There was no further business. Ednie moved, seconded by Danielson, that the meeting be adjourned, motion carried.

C. C. Baskin, *Secretary-Treasurer*

SECRETARY'S REPORT

Resolutions were mailed to appropriate persons after the annual meeting. New honorary and associate members were notified of their election. Membership certificates were mailed to honorary members. Letters of appreciation were sent to contributors and exhibitors.

Two issues of the Journal and three issues of the Newsletter plus a directory issue were mailed. The rules have been revised and distributed to the appropriate persons. A Handbook section contribution 26, "Microbiological Assay of Fungicide-Treated Seeds," has been revised and printed but not yet distributed.

The Missouri Laboratory at Columbia chose not to continue its membership and was removed from the list of members.

The list of available publications has been revised but not duplicated, awaiting prices for revised rules and contribution 26. The board was polled and voted to increase the price of old Proceedings to at least $2.00 to cover costs of mailing. Minimum charge for fourth class book rate is 65 cents.

A few overdue accounts continue to be a problem. Once an amount is more than 12 months past due it becomes difficult to collect. Most of these are through subscription agencies or are foreign accounts. Regularity in billing has helped eliminate some problems with subscription agencies. Another problem area is the USDA Finance Center in New Orleans. They tend to be very late paying and quite often accounts get confused.

The new secretary should continue efforts to bill accounts regularly. This eliminates a great deal of confusion, particularly with subscription agencies.

The Publications Committee, Larry Copeland, Journal editor, Wendell Ditmer, Newsletter editor, Steve Glassman, who edited Handbook section 26, have been helpful. Dwight Lambert's help with mailing most of the back issues of the Journal and Newsletter has been invaluable. My wife Billie's assistance with typing and bookkeeping has made it possible for me to get things done in a reasonable time. Without her help I could not have functioned. The help from my secretary, Miss Jennings, also deserves a great deal of appreciation.

It has been an enlighting, interesting and a good experience to serve as Secretary-Treasurer. I wish to thank everyone that has helped in any way and there have been many. This service has given me a much greater appreciation for the Association, its workings and accomplishments. Thank you for this opportunity.

C. C. Baskin, *Secretary-Treasurer*

TREASURER'S REPORT

June 1, 1981 - May 31, 1982

CHECKING ACCOUNT BALANCE, May 1, 1981				$ 6,484.26
RECEIPTS:				
Dues, Active & Associate			$ 5,355.00	
Publications:	Handbooks	1,573.28		
	Newsletter	2,962.00		
	Journal	5,312.25		
	Rules	2,432.33		
	Total Publications		12,279.86	
Miscellaneous:	AIBS Dividend	9.00		
	Transfer from Savings	500.00		
	Annual Meeting Refund	440.26		
	Book Display Income	422.92		
	Total Miscellaneous		1,372.18	
Total Receipts				19,007.04
TOTAL CHECKING ACCOUNT				$25,491.30

DISBURSEMENTS:

Publications:				
Rules (covers)			2,381.67	
Newsletter:	(Vol. 55-3)	1,186.00		
	(Vol. 56-1)	1,278.00		
	(Vol. 56-2)	724.84		
	Directory	739.85		
Postage		1,388.00		
Typing		214.00		
Total Newsletter			5,480.69	
Journal:	(Vol. 5-1)	3,150.03		
	Index	359.95		
Correction Vol. 4-2		94.00		
		1,112.25	4,716.23	
Total Publications				12,578.59

Postage		695.83	
Office Supplies		15.25	
Secretary		487.50	
Miscellaneous: Book Exhibits APS $40, ASA $33, AOSA $81.98	154.98		
Deposit to Savings	4,000.00		
L. Wiesner NASDA & AASCO	1,227.00		
Convention Expense	28.28		
Publication Refund	3.00		
C.A.S.T.	242.00		
Bond	35.00		
Income Tax preparation	100.00		
W. Ditmer—Travel SSB	82.00		
Check Exchange	11.31		
Total Miscellaneous		5,883.57	
TOTAL DISBURSEMENTS			19,660.74
CHECKING ACCOUNT BALANCE			5,830.56
SAVINGS ACCOUNT BALANCE (Includes interest earned during year)			17,502.25
TOTAL CASH ON HAND, May 31, 1982			$23,332.81

C. C. Baskin, *Secretary-Treasurer*

REPORTS OF STANDING COMMITTEES AND SUBCOMMITTEES

EDITORIAL COMMITTEE

Report of the Committee Chairperson
and Editor, *Journal of Seed Technology*

This has been a busy and productive year for the Editorial Committee. In addition to reports to be made by the subcommittee chairpersons, two issues of the *Journal of Seed Technology* were printed. The second of these will be distributed within a few weeks. The second major accomplishment was a reprinting (2500 copies) and distribution of the revised Rules through cooperation with Rodger Danielson and the Rules Committee. The third accomplishment was a printing of an Index issue (Vol. 6, No. 3) of the *Journal of Seed Technology* prepared by Don Grabe and Andy Huber. This issue will be distributed in early July.

Six hundred copies of each journal issue (except the Rules) were printed and mailed to the following:

	No. Copies
AOSA member laboratories	70
AOSA associate members	22
ISTA stations (other than U.S. and Canada)	123
AOSA officers, senior authors and abstracting services	26
U.S. subscriptions	91
Canada subscriptions	9
Foreign subscriptions	62
Duplicate copies (subscriptions)	412

Special appreciation is given to Dr. Robert Yaklich who continues to serve as Associate Editor. Dr. Yaklich has been very instrumental in preparing and expediting the various publications, in addition to his help in eliminating possible errors.

L. O. Copeland, *Editor*

NEWSLETTER

This has been a slow year as compared to past years for materials received for printing in the newsletter. We have had responses from ten member laboratories or members, sixteen committee reports; seventeen technical articles and three bibliographies over the year.

Printing cost went up some. Postage did not go up this fiscal year.

Cost of printing and mailing the 1981-82 Newsletter

	Vol. 55 No. 3	*Directory Issue*	*Vol. 56 No. 1*	*Vol. 56 No. 2*	*Total*
Printing	$1,186.00	$739.85	$1,278.00	$ 724.84	$3,928.69
Typing	60.00	60.00	54.00	40.00	214.00
Envelopes	18.00	—	18.00	18.00	54.00
Postage	439.72	—	440.29	458.61	1,338.62
	$1,703.72	$799.85	$1,790.29	$1,241.45	$5,535.31
Copies Mailed	627	623	623	648	
Pages	82	40	75	39	

Five copies of the C.A.S.T. Newsletter were mailed. All three issues are indexed.

After ten years as editor, I am retiring from this job. I have enjoyed the challenge and appreciate the help from the membership.

W. P. Ditmer, *Editor*

BIBLIOGRAPHY SUBCOMMITTEE

During the past year, I prepared three bibliographies of seed research papers for the *Newsletter*. These three lists contained 442 papers on "Seed Biochemistry and Physiology," 81 papers on "Seed Pathology," 16 papers on "Identification of Cultivars and Species," and 59 papers from *Seed Science and Technology*, for a total listing of 598 papers.

M. M. Kulik, *Bibliographer*

INDEXING

Previous indexes to the Proceedings were published in 1939 and 1961. These covered the years 1908-1937 and 1938-1959, respectively. This third index covers the years 1960 through 1975, the last year the journal was published under the name of "Proceedings." The format of the latest index is identical to that of the 1961 index. The manuscript for the index has been completed and it is now in press.

D. F. Grabe, *Chairperson*

SCIENCE EDUCATION EDITOR

Many letters were written to both prospective employees and employers. The lists of job openings and people seeking employment have

recently been updated. Although several names are on the current employee list, there is still a shortage of well-trained analysts. Most open positions are for a RST or equivalent; consequently, most positions are not filled for several months. Perhaps in another year the Larimer County Voc-Tech Center Technology Training Program will begin to provide enough trained people to help alleviate the shortage.

L. N. Bass, *Editor*

LEGISLATIVE COMMITTEE

Changes in Laws and Regulations which affect seed analysts have not been numerous or spectacular during the year. One change which has occurred, and which has been reported widely, are changes in the Regulations under the Federal Seed Act incorporating seed testing procedures which have been adopted by this association. It is not necessary to repeat all the details in this report, since it only updates their regulations to standard procedures in seed testing.

One change is worthy of mention in this report. The fluorescence allowed in certified perennial ryegrass classes was changed from 2% to 3%. There has been no change in the fluorescence test procedure, however.

Perhaps by the end of the year the USDA Seed Branch will publish rule changes which will provide a mechanism for cooperative agreements between individual states and USDA for testing some service samples for them. Since this is only in the development stage at this time, details will be coming later.

Efforts have been made by USDA to facilitate marketing conflicts which occur when the FSA and certain states laws disagree on Fine Texture and Coarse King lawn seed labeling. However, this has not been formally resolved through Federal Seed Act Amendment. While agreement seems obtainable, the thrust of considerations for amending the Federal Seed Act seems to relate to a complete re-write of the Act, rather than spotty amendments. The thrust is in its infancy. This associaion needs to keep alert, along with AASCO, AOSCA and all other interested parties, to this development.

Subjects which will demand your attention are proposals now being developed in the North East Seed Control Officials Association which will change the classification of noxious weed species, if adopted by any one or more states.

The subject of classifying ryegrass kinds with the fluorescence test, or for verifying varieties with that test, is still being debated.

G. E. Spain, *Chairperson*

MEMBERSHIP COMMITTEE

The Membership Committee Report for the year 1981-82 is as follows:

Nomination for Honorary Membership —

Clifford Christianson
Milton Meadows
Wendel Ditmer
Bill Dale
Dr. William Rice

Applications for Associate Membership —

James Bruce
Robert E. Lawson
Julio Marcos Filho
Denis E. Magee
Alan J. Galbreath
Susan Ulmer Wallace

Application for Laboratory Membership —

Larimer County Voc-Tech Center, Fort Collins, Colorado.

R. K. Marx, *Chairperson*

RESEARCH COMMITTEE

The research within AOSA is maintained through the involvement of twelve subcommittees that include AOSA and SCST members. A summary of the accomplishments of these subcommittees for the past year follow (chairman in parentheses):

1. Bean Seed Germination — (Robert Trent). This new subcommittee was established following the AOSA meetings in Orlando. No progress report has been received, however, the subcommittee is scheduled to meet at Corpus Christi.

2. Browse, Shrub and Forb — (Earl Belcher). The subcommittee has continued to complete descriptive information and photographs for a loose-leaf handbook. The first draft should be sent for review in October, 1982, and the final draft is expected to be completed by June of 1983.

3. Cultivar Purity — (Richard Payne). Progress has continued toward publication of a Cultivar Purity Handbook. The first draft should be completed soon. The subcommittee suggests publication of this draft in AOSA Newsletter for comments and evaluation by membership.

4. Flower — (Betty Atwater and Louis Bass). Referees of two petunia and three Impatiens seed samples were completed and the results will be reported at the annual AOSA meeting. The subcommittee anticipates that it will soon recommend extensive revision of the flower seed rules for seed testing.

5. Germination and Seed Dormancy — (Miller McDonald). Membership of this new subcommittee will be determined at Corpus Christi. Suggested areas of research for the next year include (1) germination of Kentucky bluegrass and (2) alternative germination procedures for soybeans.

6. Moisture Content Determination — (Don Grabe). Procedures were developed for determining seed moisture content by the Karl Fischer procedure. Many variables that influence moisture determination have been evaluated. This information will be incorporated in the development of the Karl Fischer procedure as a standard reference method which the oven method can be calibrated against.

7. Range Grass — (Larry Prentice). The subcommittee has submitted rules changes for (a) blowing point method for side-oats grama; (b) removal of modified method for little bluestem and (c) clarification of statements in uniform blowing methods handbook. Research will continue on the development of blowing point for little bluestem and purity factors for Tall and Western wheatgrass. A survey is being conducted regarding the feasibility of tolerance tables for "super-chaffy" grasses.

8. Red and Hard Fescue — (Barbara Haas). A report was not received, however, a telephone conversation indicated that the subcommittee will be discontinued.

9. Seed Pathology — (Denis McGee). Preliminary plans for the development of a seed disease reference text have been discussed with writing to start in the fall of 1982.

10. Tree and Shrub — (Frank Bonner). The subcommittee has continued work on a Tree Seed Testing Handbook in cooperation with ISTA. It will also continue to reconcile differences in testing rules between AOSA and ISTA.

11. TZ and Biochemical — (Ed Hardin). Have obtained and received manuscript of proposed ISTA TZ Handbook. Plan to establish subcommittee membership based on kinds of seed tested and update existing AOSA TZ Handbook in alignment with ISTA (where possible).

12. Vigor — (Miller McDonald). Dr. Ben Clark has edited the manuscript for both sections of the AOSA Vigor Testing Handbook. It should be completed by the AOSA meeting and will be submitted for publication soon after. The subcommittee will continue to conduct research on the standardization of vigor testing procedures.

D. M. TeKrony, *Chairperson*

REFEREE COMMITTEE

BLUEGRASS GERMINATION: Region I, Chairperson Robert Trent, had a combined project and was with the SCST and PNWI and compared germination by AOSA and ISTA rules. Sixteen laboratories participated

and only two laboratories were out of tolerance at the 5% level using the AOSA and ISTA methods. The results showed excellent comparability between the AOSA and ISTA methods with the AOSA average of 74.1% germination (at 5% probability of error) only 2.1% higher than the ISTA average of 72% germination (at 5% probability of error).

A questionnaire was also sent with the referee and thirteen of the sixteen laboratories preferred AOSA procedures; six laboratories commented that the ISTA Seedling Evaluation Handbook is very beneficial.

SOYBEAN GERMINATION: Region II, Chairperson Larry Prentice, conducted referee projects consisting of (1) a survey of the methods laboratories use for germination testing of soybean and (2) germination of two lots of soybeans.

The survey was sent to 75 laboratories with 44 laboratories responding. No two laboratories use the same method. Twenty-four laboratories test at 25 C, 15 laboratories test at 20-30 C and other laboratories test at 20, 23, 26, or 30 C. Twenty-four of the laboratories do not re-water during the test. Twenty-nine laboratories utilize some type of moisture-proof wrap or container when germinating soybean.

The germination samples were sent to the 44 laboratories that responded to the survey and 38 laboratories submitted test results. For lot #1, only one laboratory (3%) was out of tolerance at 5% probability of error. The average germination was 71%, with a low of 50% and a high of 80%. For lot #2, results of 8 laboratories (21%) were out of tolerance at 5% probability of error. The average germination was 61%, with a low of 39% and a high of 79%. Variation in results seemed to be due to variation in the interpretation of abnormals versus dead seeds and in the minimum amount of growth necessary to consider a seedling normal.

AGROPYRON AND TRIFOLIUM IDENTIFICATION: Region III, Chairperson Ellen Chirco, conducted referee projects to identify *Agropyron* and *Trifolium* species. The projects were sent to 30 laboratories, with 18 laboratories participating in the *Agropyron* project and 15 laboratories participating in the *Trifolium* project.

For the *Agropyron* project, there were 12 capsules each containing a single species of *Agropyron, Elymus, Festuca* or *Lolium.* All specimens were correctly identified by 7 of the 18 participating laboratories. *Lolium* ssp. was the specimen most often misidentified with 6 laboratories reporting an incorrect answer. *Agropyron repens* and *Festuca arundinacea* were misidentified by 5 laboratories. All laboratories correctly identified the specimens of *Agropyron trachycaulum, Agropyron smithii* and *Agropyron repens.* (The correctly identified *A. repens* was in a capsule separate from the capsule containing the *A. repens* which was misidentified by 5 laboratories).

For the *Trifolium* project, there were 15 capsules containing a single species and one capsule containing immature seeds of *T. repens* and *T. hybridum* for a purity separation. All of the single species were correctly identified by 6 of the 15 participating laboratories and 4 of these laboratories correctly completed the purity separation. These laboratories reported correct results for both the single species identifications and the purity separation. For the single species identification, *Trifolium pratense* was most often misidentified.

COTTON SEED VIGOR: Region IV, Chairperson Terry Turner, continued the project on the Texas Cool Test for Cotton Seed Vigor. Changes were made in the procedures that were used last year in an attempt to promote uniformity of test results. The changes made were: 8 replications were used instead of 4; a specific amount of water was applied to the towels used as media; plastic crispers were used to prevent drying; interpretations were made a specific number of hours after the seeds were planted; and temperature was more specifically controlled.

For sample 1, results of 5 of the 13 participating laboratories were out of tolerance at 5% probability of error. For sample 2, results of 8 of the 13 laboratories were out of tolerance at 5% probability of error.

The revised procedure indicated there was some improvement compared to last year's project, however, the results suggest the need for further work if the Texas Cool Test is to become standardized.

COTTON SEED GERMINATION AND VIGOR: Region V, Chairperson Wayne Guerke, conducted a referee project on the Cotton Seed Germination Test and Cotton Cool Germination Test with 21 laboratories participating.

Two lots of cotton were used in the project, with lot 1 being acid delinted and lot 2 flame delinted. Both lots were germinated at 20-30 C and at 30 C following the standard AOSA rules. Each lot of seed was tested for seed vigor using Cool Germinaiton Test procedures taken from a manuscript for the AOSA Vigor Handbook which is in the process of being prepared.

For lot 1, following AOSA rules and tested at 20-30 C, all results were in tolerance at 1% probability of error; tested at 30 C, only one laboratory's results were out of tolerance. Lot 2 showed similar results at the 2 temperature options with only one result out of tolerance in each case. Comments regarding the 20-30 C temperature option: (1) the first count is less critical, (2) less mold under normal laboratory conditions, (3) easier to interpret, (4) more similar to field temperature conditions and (5) allows use of germinator for other crops. Comments regarding the 30 C test: 1) rapid fungal damage may occur to normal seedlings and (2) allows

rapid interpretation of sample before fungus spreads. Based on the results of this referee, either temperature option will give representative results and the temperature that best suits laboratory circumstances should be used.

Cool germination test results were highly variable for both seed lots. For lot 1, results of 12 of 20 laboratories were within tolerance of the mean. For lot 2, results of only 4 of 20 laboratories were within temperature of the mean. The wide range in results for the cool tests indicates the need for further standarization work.

SOYBEAN CULTIVAR IDENTIFICATION: Was a joint project with the SCST Southern Region. This referee was designed to compare the factors of hilum color, seed coat peroxidase test and hypocotyl pigmentation test in evaluating cultivar labeling.

The referee was divided into two parts. Part I consisted of known cultivars to be used in perfecting test techniques. Part II consisted of 3 labeled soybean cultivars to be evaluated using the three factors listed above.

Twenty of the 22 participating laboratories submitted correct final responses for the 3 labeled soybean cultivars. Occasionally laboratories had incorrect individual test results, but by considering a combination of characteristics they were able to make correct decisions as to correctness of cultivar labeling.

The problems relate mainly to perfecting laboratory techniques. Based on remarks made, the two factors most critical to perfecting the hypocotyl pigmentation test are high light intensity and test duration. Intense pigmentation is obtained best with high light intensity and a relatively short test duration of 8-12 days. With hilum color there are some difficulty in distinguishing between buff and brown hila. The peroxidase test appeared to be highly reliable with a distinct positive or negative result. For the cultivar tests, "Some New Tests and Procedures for Determining Variety (Soybeans)," R. Payne, 1979, *Journal of Seed Technology* 3(2): 61-77, was used as a guideline.

The large number of correct responses verified that these tests are useful for the majority of soybean cultivars in which test results are consistently reliable.

S. D. Dobbins, *Chairperson*

RULES COMMITTEE

Four proposed rule changes were received and reviewed by the rules committee. These proposals were published in the February 1982 AOSA Newsletter and will be voted on for adoption at this meeting.

In summary the proposals included: (1) re-wording section 2.10 Inert Matter a (8) to change the current definition of ergotized crop seeds; (2) establishing a blowing point procedure for side-oats grama (sections 2.7g(1), 2.7g(2) and 2.11d(7)); (3) replacing the germination methods for New Zealand spinach (Table 3, page 57); and (4) removing little bluestem from the "modified method" (section 2.7g(1)), which would in effect require its purity testing by the "hand-method."

The committee completed its editorializing of the AOSA Rules and a complete reprinting was accomplished.

Several other items described below were directed to the committee's attention, but were not considered for a rule change this year:

> The Flower Seed Subcommittee submitted a revised flower seed germination table for review. It was recommended that they hold an open meeting to discuss their proposal before being considered as a rule change.
>
> A request concerning the classification of native species as to crop or weed seeds was submitted by Russell Ruud. The committee will study this problem and solicit input from various sources.
>
> A question concerning the use of light when germinating species not specifying light in the Rules was received from the Oklahoma Department of Agriculture. This matter will be discussed in the Executive Board and at the open Rules committee meeting.
>
> The committee is continuing to evaluate hard seededness in asparagus and sectioning dodder seeds.
>
> A question regarding the proper classification of *Allium* bulblets was referred to the committee by Dwight Lambert.

Progress of the subcommittee on Seedling Evaluation has temporarily been stalled, due to Dr. Everson's resignation as Chairman. Hopefully, the subcommittee can be restructured and continue its work.

Rodger Danielson, *Chairperson*

PUBLIC SERVICE COMMITTEE

The PSC Survey covering "Seed Testing Equipment and Supplies" was summarized, submitted to Wendell Ditmer last July, and published in the September, 1981 issue of the AOSA Newsletter. Based on some of the comments we have received, this report should be very helpful for those seeking a source or sources of supplies and equipment.

The most popular item in our inventory this past year was again the AOSA slide set covering seed testing areas. There are currently two complete sets available for loan. We received requests for these slides from

the North Central Region Federal Lab, the Idaho State Lab, the Ransom Seed Laboratory, and the New York State Agricultural Experiment Station.

The Merle Pierpoint Illustration Collection was also loaned to the Georgia Seed Division. In all cases, the slides or illustrations were used as aides in lectures or training sessions, and those people involved felt they were very helpful.

Our 81-82 project was a review of our Committee Function as defined under By-Law 5 of the Constitution. More input is still needed from our Committee and the Constitution Committee before any proposals on revisions will be made. It should be noted that this proposed study and revision of the PSC function is not at all new as the previous PSC Chairman made this recommendation to the Executive Board at the 1980 meeting.

D. F. Svik, *Chairperson*

BUDGET COMMITTEE

AOSA Budget for the Year 1982-83

Receipts

Cash on hand (beginning of year) TOTAL	$23,332.81
Publications:	
Handbooks	2,000.00
Newsletter	3,000.00
Journals	5,000.00
Rules and Binders	5,000.00
Membership Dues	6,000.00
Interest	500.00
Miscellaneous Income	500.00
TOTAL RECEIPTS	$45,332.81

Disbursements

Publications:	
Handbooks (Microbiological Assay on Treated Seed; Vigor; Sand; Administrative)	$ 8,500.00
Newsletters (Includes Index, '76-82, AOSA Constitution; Cultivar)	6,900.00
Journals (3 Publications and Index)	9,250.00
Rules Reprinted	6,934.00
Meeting Advance	1,000.00
C.A.S.T. Dues	250.00
Travel for AOSA Representative	1,500.00
Assistance for Secretary-Treasurer:	
Part-time Help	750.00
Office Supplies	100.00
Postage	1,200.00
Secretary-Treasurer Bond	50.00
Miscellaneous	500.00
TOTAL DISBURSEMENTS	$36,934.00
Cash On Hand (End of Year)	$ 8,398.81
TOTAL DISBURSEMENTS AND CASH BALANCE	$45,332.81

G. Fenderson, *Chairperson*

CONSTITUTION COMMITTEE

Interest in the Constitution Committee was very high this year due to the number and significance of issues that were addressed. Since few of the issues were entirely resolved, I have scheduled both an open and closed session at the upcoming AOSA Meeting in Texas. The issues addressed and recommendations of the committee follow:

1. (By-Law V 4)
   Definition Public Service Committee
   COMMITTEE RECOMMENDATION — Postponed to AOSA Texas Meeting.
2. (Article V 3, paragraph 2)
   The term of office of the Secretary-Treasurer shall be for three years and an incumbent MAY succeed himself.
   COMMITTEE RECOMMENDATION — Approved.
3. (Article V 3, Paragraph 1)
   The term of office of the President and Vice-President shall be FOR TWO YEARS beginning at the close of one annual meeting and ending at the close of the SECOND annual meeting.
   COMMITTEE RECOMMENDATION — Approved.
4. (Article III 4)
   Consideration to possible proxy voting.
   COMMITTEE RECOMMENDATION — Postponed to AOSA Texas Meeting.
5. (Article III 3)
   Member laboratories definition change (to permit entry of Voc-Tech).
   COMMITTEE RECOMMENDATION — Opposed pending discussion at AOSA Texas Meeting.
6. Update and Reprinting of AOSA Constitution.
   COMMITTEE RECOMMENDATION — Approved following finalization of all current issues.
7. (By Law I, *fifth sentence*)
   The ballots for the election of Vice-President and Secretary-Treasurer shall include no more than three, top available condidates for each office.

   COMMITTEE RECOMMENDATION — Opposed.

R. Trent, *Chairperson*

SEED STANDARDIZATION BRANCH ADVISORY COMMITTEE

The advisory committee is made up of the following AOSA members: J. Bloodgood, M. H. Day, E. E. Hardin, R. Ruud, G. E. Spain and R. Trent. The following representatives are serving as advisors to the committee from their respective organizations: R. H. Edwards and R. H. Emmett, SCST; P. King, and R. Sayers, ASTA; and L. Svajgr, AOSCA.

On February 23 and May 24, 1982, I had the opportunity to visit the SSB at Beltsville. As always I had an opportunity to visit with each individual member of the staff and talk freely. Many of the tasks are being accomplished and more needs to be done.

Various reports on the SSB have appeared in the Newsletter: Volume 55, No. 3, pages 44-46; Volume 56, No. 1, pages 28-31 and 34-35 and Volume 56, No. 2, pages 13-15.

W. P. Ditmer, *Chairperson*

NECROLOGY COMMITTEE

Ruby Ure Crouley

Ruby Ure Crouley, passed away December 24, 1981 at the age of 84 years. She was born in Liverpool, England in 1897 and came to Minneapolis, Minnesota with other members of her family at the age of 7 in 1904. She attended North High School in Minneapolis and began work in seed analysis at Northrup King and Company in Minneapolis in 1916. She joined the staff of the Minnesota Seed Laboratory October 29, 1917. In 1921 she became director of the laboratory and continued in that capacity until her resignation October 1940.

Ruby was a very competent analyst, although she had no formal education beyond high school. Her interest and dedication to seed testing was an inspiration to all who trained under her direction. A number of her students later became directors of laboratories.

She was married to Don E. Crouley in September, 1924. They lived at Maple Plain, Minnesota. She is survived by her husband, Don, four sisters and one brother.

C. L. Sciple, *Chairperson*

CAST

The Council for Agricultural Science and Technology (CAST) became ten years old on May 26, 1982. The celebration of this event will be held on July 29 and 30 at Ames, Iowa. CAST President Upchurch has an-

nounced that the anniversary will be climaxed with a banquet on Thursday, July 29, 1982. The banquet speaker will be Dr. Norman Bourlaug, renowned wheatbreeder and Nobel Peace Prize winner. He will speak on "the Place of Science in the Policy Making Process for Agriculture."

During its brief adolescence, CAST has come of age despite attacks on its integrity by a prominent scientific publication and a few newspapers. CAST prevailed by rigorously maintaining its founding principles and reexamining its present position and organizational structure. The attacks had a postive effect on CAST by reassuring its audience that CAST is a reliable source of unbiased scientific information on the major food and agricultural issues. Now with maturity, CAST has, by request, produced important documents for the U.S. Congress, Environmental Protection Agency, General Accounting Office, Food and Drug Administration, Bureau of Land Management, Pacific Legal Foundation, U.S. Dept. of Agriculture, Officials and Legislators in State Governments, Federal Energy Administration, Energy Research and Development Administration and the News Media. A massive amount of information involving 158 publications and "tons" of correspondence has been disseminated by CAST. For the most part this activity reflects the energy that Executive Vice President Charles A. Black has had on the CAST headquarter staff, task forces and general membership.

Until now most of the reports generated by CAST task forces have not directly involved problems related to seeds. However, this year, under the influence of our past AOSA representative to the CAST Board of Directors, Ben Clark, a task force has been assigned to study "Germplasm Preservation and Utilization for Agricultural Purposes." This report is not exclusive to seeds as a means of preserving germplasm but seeds should demand a substantial part of the text. Dr. Harley Otto of the Minnesota Crop Improvement Association will be the chairman of the task force.

The members of AOSA should express their gratitude to Ben Clark for being a distinguished and able representative to the CAST Board of Directors. This is an awesome task because the CAST Board of Directors represent a cross section of the best minds of today in agricultural and food sciences. It is an honor for me to follow Ben in this task. I will try to be worthy of it.

A. L. Larson, *Chairperson*

MEETING PLACE COMMITTEE

As a result of action taken during the 1981 Orlando meeting, meeting places for 1983 and 1984 were chosen with reference to the following locations:

1983 — Ottawa, Ontario, Canada, hosted by Agriculture Canada

1984 — Boise, Idaho, hosted by the Idaho Department of Agriculture

The committee has currently reviewed the following invitations for recommendation and possible action:

(1) MINNESOTA, submitted by Mr. C. Will Dunn, on behalf of the Minnesota State Seed Laboratory and Minnesota Department of Agriculture, to be held in the Minneapolis-St. Paul area for *1986.*

(2) VIRGINIA, submitted by Mr. Harry Smith, on behalf of the Virginia State Seed Laboratory and Virginia Department of Agriculture, to be held in Richmond for *1985 or 1986.*

The committee recommends acceptance of the invitations from Virginia for 1985 and Minnesota for 1986.

L. W. Nees, *Chairperson*

TEACHING AND TRAINING COMMITTEE

The program for the 1982 annual meeting will be a seed identification workshop under the guidance of Frieda Wertman and Charlotte Wall. The workshop will consist of both formal presentations and informal discussions on problem seeds. This should be a very interesting and informative program.

L. N. Bass, *Chairperson*

LIAISON COMMITTEE

All seed organizations which inter-relate with AOSA were contacted and the offer to communicate and cooperate was extended.

President Dr. Loren Wiesner represented AOSA at the AOSCA, NASDA and AASCO meetings during the past year. There was a resolution before NASDA concerning the labeling of seed for vigor. President Wiesner was successful in getting that resolution changed to one that supports AOSA's efforts in development and standardization of vigor tests.

Rodger Danielson officially represented AOSA at the ASTA meetings where vigor testing was discussed. He was able to convince the seed trade that the publication of a seed vigor handbook would be in the best interest of seed technologists, the seed trade and the consumer. These two resolutions by NASDA and ASTA appear in the February 1982 issue of the AOSA Newsletter Vol. 56, No. 1.

President Wiesner's discussion with AASCO resulted in a proposal concerning ryegrass fluorescence testing. This proposal will be studied by the Joint Legislative committee.

The issues discussed and the influence AOSA representation had on the discussions substantiate the need for official representation at these very important meetings. This should be the goal of future Liaison committee chairmen.

E. E. Hardin, *Chairperson*

NOMINATIONS COMMITTEE

The following have been elected to the indicated 1982 vacant positions within AOSA. This was a result of nominations and elections as prescribed in the constitution of AOSA:

Vice-President	Rodger Danielson
Secretary-Treasurer	Bob Trent
1st Executive Board Vacancy	Dave Svik
2nd Executive Board Vacancy	Russell Ruud

E. E. Hardin, *Chairperson*

ADMINISTRATIVE PROCEDURES COMMITTEE

At the 1981 annual meeting, Dr. William Rice provided me with a notebook containing material he had gathered over a number of years in preparation for a handbook on administrative procedures of the Association.

During the past year I have taken the material Bill acquired and assembled it. Rough drafts of the assembled material of the President, Vice President, and Secretary-Treasurer were sent to persons who had served or were serving in these positions. As the result of this review, final drafts have been made of the material for President and Vice President. Copies of these are available for the Executive Board to review. Material for the Secretary-Treasurer has not been sent in for final draft.

I would like some guidance as to the necessity of including procedures for all committees as well as the number of copies for a handbook. I have agreed to stay as chairman of the committee and would hope to have the material completed and to the handbook editor by early fall.

D. W. Lambert, *Chairperson*

VIGOR TEST SUBCOMMITTEE

Last year, the AOSA Vigor Test Committee reported that a concensus had been achieved on the need for and development of a Vigor Test Handbook. The objectives of this Handbook were to: provide an educa-

tional perspective of the current status of seed vigor and vigor testing and to provide suggested vigor test procedures. The first objective — that of an educational and historical background of vigor testing — was directed by Dr. Kim Joo of Northrup King who provided an outline of the segments to be covered as well as specific assignments to authors recognized for their expertise in these critical areas. The second objective — outlining suggested vigor test procedures — was directed by myself and included the following vigor tests: accelerated aging, cold test, conductivity test, cool germination test, seedling growth rate, seedling vigor classification, speed of germination, and tetrazolium tests. After these segments were compiled, they were forwarded to Dr. Ben Clark, Cornell University, who agreed to serve as editor of the AOSA Vigor Test Handbook. In March, Dr. Clark completed his review of the Handbook and the edited portions were entered on word processors for ease in subsequent revisions, Xeroxed, and forwarded to Committee members for review and discussions at these meetings.

The Vigor Test Handbook at this time represents a significant accomplishment of this Committee. Presently, it is composed of two parts with the first part containing 100 pages of text, five figures, and 248 references. The second part consists of eight vigor tests, seven figures, three tables, 117 references, and is 64 pages in length. Following review and discussion by the Committee in our closed meeting, it was agreed that some redundancy continued to exist and that further revisions in the text were still required. Consequently, these specific areas were assigned to respective authors to be completed by August 1. Following receipt of these changes, Drs. Joo, Clark, and myself have been appointed as a final editing committee. We hope to meet and make the required revisions by September 1 at which time the revised edition encompassing all the requested suggestions will be submitted to the Committee for a final review by October 1. Assuming that no significant revisions remain, it may be possible to have the Vigor Test Handbook manuscript submitted to the Executive Board and to a publisher by November 1 for a December publication date. At the very latest, we wish to have the Handbook available for purchase at the AOSA-SCST and ISTA meeting in Ottawa, Canada, next year.

The publisher of the AOSA "Rules" and TZ Handbook, Colwell Press has been contacted regarding potential publication costs of the Handbook to the Association. It is recommended by this Committee that 2,000 copies be published which will include approximately 100 pages of typeset print as well as figures and tables. The sale cost of the Handbook was suggseted as $20.00.

There is little question that this Committee views the publication of this Handbook as an important addition to seed testing. Clearly, the

issues relating to the legal implications such a Handbook may have on seed testing have been of prime concern to this Committee. Consequently, we have attempted to insure that all groups associated with the sale and marketing of seed have had important roles in its development. Despite the divergent interests represented by the varied groups on this Committee, the Handbook appears to be in its final stages of completion. Such progress serves to emphasize the common needs that all seed organizations such as AOSA, SCST, AASCO, AOSCA, and ASTA recognize that such a publication will have on improved seed testing. As Chairman, appreciation and acknowledgement is extended to all parties who have assisted in this development.

In addition to completion of the Vigor Test Handbook which has served as the prime objective of this Committee during the last year, continuing efforts to assess the standardization of vigor test results have also been made. Mr. Gurnia M. Moore of the Alabama State Seed Laboratory has conducted "referees" of the accelerated aging test for the last three years. The results are presented in Tables 1-3.

The above results for each table were obtained by the following test procedure: 41 C, 38 grams of seeds, 50 ml of water and 64 hours in the accelerated aging chamber. The seeds were then germinated in rolled towels at 25 C and one count was made on the fourth day in accordance with the AOSA Rules for Testing Seeds. Clearly, the results for all years evaluated show a remarkably close correlation with reported results among laboratories for each seed lot. In many cases, the results are closer

Table 1. Results of 1980 soybean seed vigor referee by use of accelerated aging test.

Labs Participating	Lot No. 53961	Lot No. 54065	
	84%	90%	Standard Germ. 25 C
	Vigor	Vigor	
Arkansas	56%	86%	AA Plexiglass Chamber in Pfeiffer
Hulsey	61	81	AA Plexiglass Chamber
Louisiana	71	86	Stultz AA Chamber
Mississippi	65	83	Stultz AA Chamber
Florida	64	84	Stultz AA Chamber
Alabama	63	73	AA Chamber #17, Plexiglass Chamber in Pfeiffer
Alabama	58	79	AA Chamber #18, Plexiglass Chamber in Pfeiffer
Alabama	56	76	Stultz AA Chamber
Mean	61.75%	81%	

Table 2. Results of 1981 soybean seed vigor referee by use of accelerated aging test.

Labs Participating	Lot No. 56812	Lot No. 56813	
	84%	86%	Standard Germ. 25 C
	Vigor	Vigor	
Arkansas	64%	84%	
Florida	65	83	
Mississippi	68	83	
Louisiana	68	78	
Hulsey	56	78	
N. Kalbacken	61	83	
Alabama	67	82	AA Plexiglass Chamber #18 in Pfeiffer
Alabama	60	83	AA Plexiglass Chamber #17
Alabama	64	75	AA Chamber #18 Second Test
Alabama	62	79	Stultz AA Chamber
Mean	63.50%	80.80%	

Table 3. Results of 1982 soybean seed vigor referee by use of accelerated aging test.

Labs Participating	Lot No. 07451	Lot No. 07419	
	86%	93%	Standard Germ. 25 C
	Vigor	Vigor	
Mississippi	76%	84%	
Alabama	73	82	
Georgia	75	81	
Florida	74	85	
Hulsey	76	77	
N. Kalbacken	75	80	
Arkansas	75	86	
Louisiana	74	78	
Virginia	74	79	
Mean	74.66%	81.33%	

than most germination referees and indicate that the accelerated aging test using the described procedures is approaching standardization. Similar results have been reported in other "referees" conducted by this Committee (Tao 1979, 1980).

M. B. McDonald, Jr., *Chairperson*

MERIT AWARD COMMITTEE

This Committee received two nominations for the 1982 Merit Award. The resume of each candidate giving a listing of their contribution to AOSA was circulated to the Committee Members and Arnold Larsen was selected.

G. Fenderson, *Chairperson*

AUDIT COMMITTEE

The Auditing Committee in review of the AOSA financial records finds these records in order and therefore, moves for acceptance of this report.

R. Trent, *Chairperson*

ACCREDITATION OF LABORATORIES COMMITTEE

The Committee has no progress to report to you. The Association's objectives for this committee are still unclear, and progress seems to come slowly.

Recent discussions and actions have indicated some seed laboratory administrators do not agree with laboratory accreditation being a part of seed analyst certification. There are valid concerns when one views the subject from a state's political infrastructure. How, then, can we progress towards the advantages we seek from analysts certification? Many analysts tell me they approve of certification for reasons of challenge, professional fulfillment, self-confidence, recognition, and support for monetary reward. We believe seed analysts deserve these benefits, separate and apart from seedmen's need for confidence in analysts whose work results in regulatory actions against them. Fortunately, it appears to the committee that analysts' certification is compatible with the needs of the individual and the industry.

There have been suggestions that the committee might limit its functions to the preparation of either a study guide, or an examination that would be released to "whomever may be concerned." If that satisfies this association's objectives, then the committee will work toward that end.

Our proposal, at this point, is to continue with a voluntary seed analyst certification plan, including the examination which would be conducted as an AOSA function. Analysts applying for the examination would be responsible for their own arrangements of time and expense. They might work out such arrangements with their administrators as a part of their position, or pursue their goal on their own.

Obviously, many laboratory administrators do not perceive the need for laboratory accreditation through AOSA. Maybe some of you do not perceive the need even for analysts certification. If I were a beginning analyst at this time, I believe I would want every certification possible, for I believe we still see the time that employment, promotions, salary increments, job security and other personnel matters could well be decided, or strongly influenced by such professional indicators. I believe as strongly as ever that analysts have everything to gain, and nothing to lose by such a program. In time to come, seed lab administrators may even learn the meaning of serendipity, since good fortune could accrue to them in the process.

G. F. Spain, *Chairperson*

PRESIDENTIAL ADDRESS

— It's Time —

Time is one of the most precious things we have and the one which is in the shortest supply. Perhaps we should classify time as an endangered *species,* if we aren't careful there will not be any left. According to Webster's dictionary: time is A MEASURABLE PERIOD DURING WHICH AN ACTION, PROCESS OR CONDITION EXISTS OR CONTINUES. In other words, we always have the same time each day, month or year (except leap year). That means we have 31,536,000 seconds/year and if you make every second count that's a lot of time.

Another way to look at time is to divide it up into the past, present and future. I have selected "It's Time" as the theme for my presidential address because I truly feel *it is time* for this Association to take a look at it's time schedule.

To make this self-evaluation I would first like to look at the past as far as our Association is concerned and at the industry we serve — agriculture.

When it comes to food production, North America leads the world. No where else and never before in history have so few grown so much food for so many with so little labor and land as do our farmers. Today each farmer raises enough to feed 65 people, nearly 10 times as much food as their farming grandfathers did in 1910. So efficient are our farmers that they feed 226 million people in this country and 144 million other people abroad. How are farmers achieving these great strides? Most of the increased production can be attributed to scientific agriculture whose strengths are plant genetics, chemistry and engineering. Agricultural engineers have developed many new types of equipment and made others more efficient. We also know what agricultural chemicals have done for production. Plant genetics is most familiar to us as seed technologists. Our seed industry has developed based on the development of improved cultivars. Along with the new cultivars comes the need to determine seed quality, which is our bread and butter. As Edgar Brown put it, *"The practical object of seed testing and seed legislation is to give basic aid to agriculture through the ethical marketing of seed."* This objective is still true today; however, there have been several changes in the methods of testing and the needs of the seed industry. When this association was formed back in 1908 there were fewer numbers of cultivars, in fact many of our species did not have cultivars. Because of this fact, much of the testing was done to determine differences among species and not among cultivars. For example, look where we are today with the fluorescence test of ryegrass. When Gentner discovered that annual ryegrass roots fluoresced he was mainly concerned with the separ-

ation of species not cultivars. Since then we have tried to apply this species test to cultivars which have been developed by plant breeders without concern about fluorescence. The mottled seed test for sweetclover is another test which was developed for determination of species differences but is no longer applicable for the cultivars being developed today. These examples and many others show some of the change which have been creating problems for our association.

It's time — we take a hard look at what our objectives are today and then try to modify our methods. First of all we should not try to use one test to indicate several things — this I feel we are doing with the germination test. We define seed germination as the *emergence and development from the seed embryo of those essential structures which for the kind of seed in question, are indicative of the ability to produce a normal plant under favorable conditions.* The key words in that definition are (1) essential structures and (2) favorable conditions. In the past we have become so critical in our evaluation of essential structures that we have lost sight of what we are determining and that is seed viability. Perhaps Necrosis in lettuce is a good example. The other key word concerning germination is favorable conditions — in fact I prefer to say ideal condition of light, temperature, moisture and composition of air. The germination conditions used are the best possible because they were developed through research in which we were striving for the highest percent germination possible. Consequently, a percent germination tells consumers how much viable seed is present when grown under ideal conditions. Therefore, the only thing our germination tests should be used for is to compare the quality of seed when purchasing seed from a seed dealer. However, we know that everyone, including ourselves, read a lot more into a germination test. I tell people that a germination does not tell them how the seed will perform in the field, unless of course you have a large number of dead seed.

We should consider using tetrazolium (TZ) test results for labeling seed viability and then when we want to know something about field performance we could conduct stress tests or vigor tests to determine this characteristic. I guess, I am saying that for some species a germination test could be used to determine field performance, but then the germination test should be run under non-ideal conditions like we are doing with the cold test. Another area where the germination test is deceiving the consumer is when dormant seed occur and you use all of the prescribed dormancy breaking treatments to give maximum germination or viability. Many of the forage grasses we test have dormancy which lasts for a long period of time and if this seed is prechilled it germinates very well even though it may perform poorly in the field. Even cereals can cause a problem in this respect. We in Montana have had problems with barley,

which was still dormant in the spring when planted, even though the label showed a germination of 95%. In this particular case it would have been better to label by TZ and then conduct a germination test to determine field performance. So it's time to determine if our present germination procedure is doing what Edgar Brown stated was our objective of helping agriculture through ethical marketing of seed.

Another area which concerns me is the relationship within the association between research and testing. What really bothers me is the desire to hang on to the old traditional means of testing seed rather than accept some of the new methods or concepts of testing. I am not the first one to voice this concern, Don Grabe published a paper on it several years ago in which he referred to many of these traditional things as Sacred Cows. Don presented this paper back in 1968 and it was published in the AOSA Proceedings, Vol. 58. Let me list his 6 sacred cows:

Sacred Cow #1. *That methods of breaking dormancy should be "naturalistic."*
In other words we can use KNO_3 and prechill because they are natural, but naturally occurring plant hormones are out. But what about using germination blotters — are they natural?

Sacred Cow #2. *That germination tests are conducted under optimum conditions.*
We may be providing close to optimum temperature and moisture, but what about the germination medium — does it react like soil in dispersion of inhibitors, preventing molds or in seed to surface contact for seed imbibition?

Sacred Cow #3. *That rigid arbitrary rules assure precision of results.*
The only time precision can be absolute is at maximum viability, not when germinability is variable.

Sacred Cow #4. *That determination of germinability is more important than viability.*
This point is similar to what I have referred to earlier and that is today the seedmen and consumers really want to know the viability of the seed and not the germination under ideal conditions which are ideal for some seed lots or species but not for others. Most of your dormant species fall into this category. A 5% germination of green needlegrass is worthless unless you know its viability and as this seed lot ages its germination ability will increase causing variability among laboratories and problems in seed control work.

Sacred Cow #5. *That Rules changes must be based on specific data.*
Many of the inconsistencies in the Rules have occurred because research has been conducted on one popular species, but no re-

search has or will be conducted on a similar species or subspecies. Consequently, we change the Rules for testing the popular species but do not change the testing procedures for the other species. An example would be the use of fungicide treatment; if mold is a problem on blotters for one species, wouldn't it be logical to use it on other species where mold is also a problem. I agree with Don on this point but I still feel we must require research data before making a rules change.

Sacred Cow #6. *That the purpose of the seed test is to determine the value of the seed for planting.*

There is more to field performance than just knowing the composition of the seed lot as it relates to purity and germination (viability). Here again, I believe we are reading too much into too few tests. We need pathological tests, vigor tests, stress tests and others if we are to predict value of seed for planting.

I would like to add one more sacred cow.

Sacred Cow #7. *That all test results must be enforceable and be put on a label.*

This hang-up has prevented and is preventing the use of many of our performance tests because these tests are usually measuring seed attributes which are changing daily. Vigor testing for example is a useful tool but in my estimation can not be refined to a point where results can be placed on a label. However, vigor tests are being used today and these tests are helping to assure that we are planting the best seed possible. This is occurring mainly because of competition among seed companies and that is how it should be. Therefore, it's time to encourage the use of tests which have been devloped and use everything in our arsenal to obtain information on seed quality.

Now it's time to look to the future and ask the question — Who will replace us? As I look around this room I see several people with a lot of snow on the top and we have already had several of our past leaders retire. We have always had a concern about training bench analysts. This particular area of training has been somewhat relieved because of the opening of the school in Colorado. Now I am becoming concerned about the training of seed technologists at the M.S. and Ph.D. levels. How many in our midst are graduate students? I remember when we had a large number of graduate students attending AOSA meetings. How are young people going to find out about opportunities in our field or become interested in seed technology unless they become involved. Another sign of lost interest in research and advanced education is that only seven

professional papers are being presented during this meeting. Back in 1913, 17 papers were presented. This lack of interest in reporting research findings, I hope, is due to lack of finances to support travel, but I also wonder if it is due to lack of acceptance of new research in seed testing.

I could not close without saying something about the Federal Seed Act cuts and the fate of the Seed Standardization Branch Laboratory. According to the latest information I have received, the agricultural department is recommending that all regional seed testing laboratories be closed and all of their responsibilities be transferred to the SSB lab. This would essentially eliminate the standardization work now going on in that laboratory. This would be a very severe blow to a principle that many of us have worked on for a long time: It appears that we have not educated our government officials in the value of these laboratories to agriculture in the U.S. and even Canada. As I see it, without these laboratories free trade among states and other countries will be hampered. What else can I say but keep up the battle and keep telling our story. Maybe we can take some encouragement from a former professional boxer — some of you may remember — Gentleman Jim Corbett — who was talking to a young boxer when he stated, "Listen mister, fight one more round. When your feet are so tired you have to shuffle back into the ring, fight one more round. When your arms are so tired you can hardly lift them to guard, fight one more round. When your nose is bleeding, and your eyes swell shut, fight one more round. Remember, you can never be whipped if you fight one more round." If you and I really believe in what we are doing, regardless of the hurdles in front of us — WE CAN'T LOSE IF WE FIGHT ONE MORE ROUND.

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