

FOREWORD

Seed Certification in South Carolina is the result of an Act passed by the General Assembly in 1945. This Act, "An Act to Foster the Production of Improved Seeds and Plants in South Carolina and Provide for the Certification Thereof" empowered Clemson College to inaugurate a program of certification of pure seeds and plants of new and improved varieties. This Statute defined the terms "certification" and "certified" as applied to seeds and plants in the act as guarantee that all necessary precautions have been taken to insure that the seeds and plants conform to commonly recognized standards of quality for such seeds and plants as established by Clemson College.

The Department of Fertilizer and Seed Certification Services of Clemson University, hereinafter referred to as Seed Certification Department, is the official seed certifying agency for South Carolina. The Seed Certification Department is a member of the Association of Official Seed Certifying Agencies (AOSCA). All standards in this publication meet or exceed the standards of AOSCA and the seed certification standards and procedures in Federal Seed Act Regulations.

This publication contains in the General Certification Standards those standards which apply generally to all crops offered for certification in South Carolina. Individual commodity standards include any modifications of the General Certification Standards as well as standards which apply only to the specific crop.

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CHAPTER 27

CLEMSON UNIVERSITY REGULATIONS

ARTICLE 14

SEED CERTIFICATION STANDARDS

27-190. GENERAL CERTIFICATION STANDARDS

In order to qualify as a seed certifying agency for purposes of section 101(a) (24) of the Federal Seed Act (7 U.S.C. 1551) the Department of Fertilizer & Seed Certification Services of Clemson University, hereinafter referred to as the Seed Certification Department, enforces standards and procedures, as conditions for its certification of seed, that meet or exceed the standards and procedures specified in sections 201.68 - 201.78 of Federal Seed Act Regulations.

The following are the minimum standards required for the certification of seed and vegetative propagating material for genetic purity and identity by the Seed Certification Department. This seed certification program shall cover planting stocks of varieties*, hybrids, multi-lines, synthetics, etc. produced, conditioned, sampled, tested and labeled in accordance with the standards of the Seed Certification Department.

Crops Without Published Standards

In the case of crops for which no standards have been published in South Carolina, standards of the Federal Seed Act or the Association of Official Seed Certifying Agencies (AOSCA) shall apply. If no Federal or AOSCA standards have been published for the crop, standards of an

AOSCA member agency certifying the crop will be used until South Carolina Standards are published.

*In some cases certification will be as to kind, on an interim basis; for example, where varieties have not been developed.

I. CLASSES OF SEED RECOGNIZED AND DEFINITION OF TERMS

- A. Breeder Seed is seed or vegetative propagating material directly controlled by the originating or sponsoring plant breeding institution, firm, or individual, and is the source for the production of the other classes of certified seed.
- B. Foundation Seed is a class of certified seed which is the progeny of Breeder or Foundation seed or vegetative propagating material produced and handled to maintain genetic purity and identity, as outlined for Foundation seed in the standards of the Seed Certification Department.
- C. Registered Seed is a class of certified seed which is the progeny of Breeder or Foundation or vegetative propagating material produced and handled to maintain genetic purity and identity as outlined for Registered seed in the standards of the Seed Certification Department.
- D. Certified Seed is a class of certified seed which is the progeny of Breeder or Foundation or Registered seed or vegetative propagating material produced and handled to maintain genetic purity and identity as outlined for Certified seed in the standards of the Seed Certification Department.
- E. Variety - The term variety (cultivar) denotes an assemblage of cultivated individuals which are distinguished by any characters (morphological, cytological, chemical or others) significant for the purposes of agriculture, forestry, or horticulture and which, when reproduced (sexually or asexually) or reconstituted, retain their distinguishing features.
- F. Off-type - a plant or seed not part of the variety in that it deviates in one or more characteristics from that which has been described by the breeder as being usual for the strain or variety.
- G. Hybrid - The term "hybrid" applied to kinds or varieties of seed means the first generation seed of a cross produced by controlling the pollination and by combining (1) two or more inbred lines; (2) one inbred or a single cross with an open pollinated variety; or (3) two selected clones, seed lines, varieties, or species. "Controlling the pollination" means to use a method of hybridization which will produce pure seed which is at least 75 percent hybrid seed. Hybrid designations shall be treated as variety names.
- H. Open-Pollination - The term "open pollination" means pollination that occurs naturally as opposed to controlled pollination such as by detasselling, cytoplasmic male sterility, self-incompatibility or similar processes.
- I. Lot of Seed - a definite quantity of seed identified by a lot number, every portion or bag of which is uniform, within permitted tolerances, for the factors which appear in the labeling.
- J. Purity - the name of the kind, type or variety and the percentage thereof; the percentage of other crop seed; the percentage of weed seeds; the percentage of

inert matter; and the names of the noxious weed seeds and the rate of occurrence of each.

- K. Conditioning - the various procedures involved in the mechanical handling of seed after harvesting to prepare the seed for marketing.
- L. Variants - seed of plants which are (a) distinct within the variety but occur naturally within the variety, (b) stable and predictable with a degree of reliability comparable to other varieties of the same kind, within recognized tolerances, when the variety is reproduced or reconstituted and (c) which were a part of the variety as originally released. Variants are not to be considered off types.
- M. Label - the term label as used herein shall be defined as an attachment to or printed area of a seed container which contains product identity and quality information as required by these standards and the SC Seed Law.

II. ELIGIBILITY REQUIREMENTS FOR CERTIFICATION OF VARIETIES

A variety shall be eligible for certification in South Carolina only if it has been approved as meriting certification by the Seed Certification Department or one other agency which is a member of AOSCA, or by an appropriate national variety review board. The originator, developer, owner or agent must provide the following information when eligibility for certification is requested (this information may be submitted on forms provided by the Seed Certification Department or on an application for U.S. Plant Variety Protection):

- A. The name of the variety. This name must be the established name if the variety has previously been marketed.
- B. A statement concerning the variety's origin and the breeding procedure used in its development.
- C. A detailed description of the morphological, physiological and other characteristics of the plants and seed that distinguish it from other varieties, including variants and the frequency expected within the variety.
- D. Evidence of performance of the variety, such as comparative yield data, insect and disease resistance, or other factors supporting the identity of the variety.
- E. A statement delineating the geographic area or areas of adaptation of the variety.
- F. A statement on the plans and procedures for the maintenance of seed classes, including the number of generations through which the variety may be multiplied.
- G. A description of the manner in which the variety is constituted when a particular cycle of reproduction or multiplication is specified.
- H. Any additional restrictions on the variety, specified by the breeder, with respect to geographic area of seed production, age of stand or other factors affecting genetic purity.
- I. A sample of seed representative of the variety as marketed.

Upon approval of a variety for certification, a detailed description of the identifiable characteristics of the variety shall be supplied to the Secretary of AOSCA by the Seed Certification Department. The Secretary of AOSCA shall make this description available to other certifying agencies to enable certification of the variety in their states.

III. LIMITATIONS OF GENERATIONS

The number of generations through which a variety may be multiplied shall be limited to that specified by the originating or sponsoring breeder or owner of the variety and shall not exceed two generations beyond the Foundation seed class with the following exceptions:

- A. Re-certification of the Certified class may be permitted for older varieties where Foundation seed is not being maintained.
- B. The production of an additional generation of the Certified class only may be permitted on a one-year basis, when an emergency is declared by the certifying agency stating that the Foundation and Registered seed supplies are not adequate to plant the needed Certified acreage of the variety. The permission of the originating or sponsoring plant breeder, institution, firm or owner of the variety, if existent, must be obtained. The additional generation of certified seed to meet the emergency need is ineligible for re-certification.

IV. APPLICATION FOR CERTIFICATION

- A. All persons who desire to have seed certified in S.C. must file applications with the Seed Certification Department. Application blanks are available from the Seed Certification Department, County Extension Service offices or Vocational Agriculture Teachers.
- B. Establishing Charges and Dates for Filing Applications

In order to establish the source, class and quantity of seed used to plant each crop to be considered for certification, the applicant must submit with the application an invoice or bill of lading and one label from each lot of seed planted. In cases where growers plant eligible seed from their own production, lot numbers for the seed stock used must be provided with the application to allow for verification that an acceptable analysis report is on file with the Seed Certification Department. The applicant's signature on the application for certification is affidavit that the information submitted for verification of seed eligibility represents the total amount of seed used

- C. Certification Charges and Dates for Filing Applications

Completed applications with accompanying seed documentary evidence specified in section B should be filed with the Seed Certification Department by the appropriate dates specified on the application and should be accompanied with applicable fees as indicated on the certification application form.

- D. Late Application Fee

If an applicant fails to file application within 15 days of the deadline date for filing an application for certification of a crop, a late fee plus an extra charge per acre will be added to regular certification charges.

E. Canceling Applications

To receive a full refund of all charges related to the application, applicants desiring to cancel applications for certification must inform the Seed Certification Department in sufficient time to notify the field inspector. If the inspector cannot be notified in time to prevent an unnecessary trip to the farm, the farm fee indicated on the application will be assessed.

V. PRODUCTION OF SEED

A. Maintenance of Genetic Purity and Identity

1. The applicant for certification shall be responsible for maintaining genetic purity and identity at all stages of certification including seeding, harvesting, storage, conditioning and labeling of the seed. Failure of the applicant to maintain genetic purity and identity at any stage of certification shall be cause for rejection of the crop for certification.
2. The applicant's signature on the application for certification is affidavit of the following:
 - A. That all equipment involved in planting, harvesting or other handling will be adequately cleaned to maintain genetic purity and identity of the seed.
 - B. That only the seed verified as the eligible seed source on the application was planted in the field(s) described on the application.
 - C. That the identity of the seed will be maintained from harvest to the time it leaves the applicant's possession through the use of an identification system as indicated in this section, F and Section VI, B, 2.

B. Unit of Certification

The unit of certification shall be a clearly defined area, which may be divided subject to specific crop standards.

C. Field Inspection

One or more field inspections shall be made each time a seed crop of any certified class is to be harvested and when genetic purity and identity or any other factor affecting seed certification can best be determined. The field shall be in such condition to permit an adequate inspection to determine genetic purity and identity.

Weeds present in any field to the extent that genetic purity determination is not possible shall be sufficient cause for rejection of that field.

D. Re-inspection of Rejected Fields

If a grower desires re-inspection of a rejected field, he must notify the Department when deficiencies have been corrected. The cost of re-inspections shall be another farm fee and inspection fee. Another farm fee will not be charged on a re-inspection if a re-inspection can be performed in conjunction with other first-time inspection work on later maturing varieties, etc.

E. Seed-Borne Diseases and Seed Treatment

Every field for which certification is requested shall show evidence that reasonable precaution has been taken to control seed-borne diseases. The field at time of inspection shall not contain injurious seed-borne plant diseases beyond established tolerances specified in the individual crop seed standards. New diseases may create a need for new standards before they can be published. In such situations, the Seed Certification Department shall impose such standards as are deemed to be in the best interest of S.C. Certified seed. When seed of a variety without resistance to a seed-borne disease has been subjected to possible infection by disease it is desirable that such seed be treated with a recommended seed treatment.

F. Inspection of Harvested Seed

Harvested lots of seed from inspected fields may be inspected at any time by representatives of the Seed Certification Department. Evidence that any lot of seed has not been protected from contamination which affects genetic purity, or is not properly identified, shall be cause for rejection of the seed for certification. Bins and other storage facilities must be labeled or marked to indicate crop, variety, and class. Office records on identification of seed in storage must indicate variety, class, grower, approximate quantity and storage.

G. Producer's Estimate of Production

After an applicant's fields have passed inspection and have been harvested he will be furnished a form by the Seed Certification Department on which he must report his estimate of production. This information must be on file with the Seed Certification Department before certification labels will be issued.

H. Bulk Shipment of Certified Seed for Conditioning

When any class of certified seed is being transported in bulk for conditioning, the form Shipping, receiving and Conditioning Report for Bulk Seed must be completed and filed with the Seed Certification Department. This form identifies the certifying agency, the crop and variety, class of seed, lot number, quantity, conditioner, etc. This form is also to be used to record change of ownership of seed.

VI. CONDITIONING OF SEED

- A. All seed to be certified in South Carolina must be conditioned at facilities which are inspected and approved for conditioning certified seed. The seed may be conditioned by the grower on his own equipment or by an approved custom or commercial conditioner provided inspections by the Seed Certification Department determine that genetic purity and identity can be maintained during all handling of certified seed at the facility including storage, conditioning and labeling.
- B. Conditioners of all classes of certified seed shall meet the following requirements:
1. Facilities must be available that can condition seed without introducing admixtures. The conditioner shall be responsible for proper cleaning of facilities to prevent contamination of certified seed delivered for conditioning.
 2. Identity of the seed must be maintained at all times.
 - a. Certified seed being delivered for conditioning must be adequately identified by the grower. All unconditioned certified seed stored in bins or other areas on the premises must be labeled or marked to indicate variety and class.

At the time of bagging of conditioned certified seed, each bag of seed shall have permanently marked on it the variety and lot number. The use of a stencil or stamp is recommended but any means of permanently marking bags is acceptable. Once marked on the bag, a lot number may not be removed or marked out and another lot number substituted for it.
 - b. Each bin or container of bulk conditioned seed which is ready for sale or which is being transferred to storage for sale must be labeled with the form S. C. Bulk Registered or Certified Seed Label and Inventory which must be obtained from the Seed Certification Department.
 3. Records of all operations relating to certification must be complete and adequate to account for all incoming seed and final disposition of seed.

Conditioners shall permit inspection by the Seed Certification Department of all records pertaining to certified seed.
 4. Conditioners shall designate an individual who shall be responsible for performing the duties required by the Seed Certification Department.
- C. Seed lots of the same variety and seed class may be blended and the seed class retained. If lots of different classes are blended, the lowest class shall be applied to the resultant blend. Such blending can only be done when authorized by the Seed Certification Department.
- D. The Seed Certification Department shall have the authority, without prior notice, to inspect facilities used to condition certified seed to determine that the facilities and handling of the seed comply with the requirements of section VI,

Conditioning of Seed. Any conditioner who fails to meet these requirements shall forfeit his right to condition certified seed until deficiencies are corrected.

- E. If South Carolina certification labels are to be issued on seed which was field-approved in South Carolina but is to be conditioned in another state, the conditioner must supply the Seed Certification Department proof of conditioning plant approval by the seed certifying agency of the state in which the plant is located.
- F. Approved Conditioners
 3. Conditioners who desire to condition certified seed for other growers in South Carolina must apply annually for Approved Conditioner classification. Conditioners desiring to apply for Approved Conditioner classification for the first time should request application blanks from the Seed Certification Department.
 4. Inspections. Plants applying for Approved classification will be inspected at least once annually with the times of inspections to be at the discretion of the Seed Certification Department and without prior notification to the conditioner. Approved conditioner classification shall remain in effect for one year providing subsequent inspections do not disclose deficiencies which result in loss of the classification. If, during inspection, deficiencies are noted that prevent the facility from being granted the Approved the owner will have 30 days to correct the deficiencies before losing the Approved classification. Consideration will be given to correction of deficiencies that would require more than 30 days because of need for mechanical or engineering changes. If Approved status is lost as the result of deficiencies not corrected, reinstatement must be accomplished by filing a new application and paying another inspection fee. At the end of the year during which a facility has retained its Approved status, the Seed Certification Department will notify the conditioner of the need to file an application for renewal of Approved classification.
 5. Inspection Fee. The annual fee for Approved conditioner classification shall be payable at the time application is filed. The fee will cover all inspections for one year if, during the course of the year's inspections, the facility retains its Approved classification. If a facility loses its Approved classification as the result of deficiencies noted during inspections and the conditioner desires to correct the deficiencies and request reinstatement to Approved status, he must file a new application and pay the fee again.
 6. Listing of Approved Conditioners

The Seed Certification Department shall publish semi-annually and mail to seedsmen and growers the list of Approved Certified Seed Conditioners in South Carolina. When a facility loses Approved status, all certified seed growers who are using the facility will be notified of the need to arrange for conditioning elsewhere until the facility regains Approved status.

7. Loss of Approved Conditioner Classification

Loss of Approved conditioner classification may result from:

- a. Failure to meet conditioning requirements of this section, VI. Conditioning of Seed. Under these circumstances reinstatement of the Approved classification may be accomplished as indicated under F. 3. Inspection Fee.
- b. If, during any year in which a conditioner is classified Approved, more than ten percent (10%) of the samples of his certified seed are found out of tolerance in a percentage of purity, inert matter, weed seed or other crop seed, he will forfeit the Approved classification for no less than one year. This applies to all classes of certified seed on which the conditioner's name appears as seedsman on the certification label or Bulk Conditioned Seed Sale Certificate for S. C. Registered or Certified Seed. Analyses of samples of certified seed conditioned for other growers shall be the basis for application of this standard to the conditioner who conditions no certified seed for himself. Determination of samples out of tolerance will be based on analyses of a combination of the samples of certified seed obtained by Seed Certification Department and S. C. Department of Agriculture inspectors as compared to analysis labels on the seed. No conditioner shall have his Approved classification withdrawn on the basis of analyses of less than fifty (50) samples annually unless the number of samples found out of tolerance at the end of the year exceeds five (5), (10% of 50). When less than fifty (50) samples of a conditioner's certified seed are drawn annually by Seed Certification and S. C. Department of Agriculture inspectors, and the number of samples found out of tolerance during the year has not exceeded five (5), the percentage of samples out of tolerance will be determined when fifty (50) such samples have been drawn and analyzed.

Should loss of Approved Conditioner classification be appealed to the Seed Certification Department and not be resolved amicably, the complainant may appeal to the Clemson University Board of Trustees. In which case, the Chairman of the Board will appoint a committee with Board representation and representative members of the seed industry to study the matter and make recommendations to the Board.

VII. LOT SIZE, SAMPLING, SEED TESTING

- A. A maximum quantity of seed permitted, per lot and size of sample required, for a purity and germination test is as follows:

<u>CROP</u>	<u>MAXIMUM LOT</u>	<u>SAMPLE SIZE</u>
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	<u>SIZE</u>	
Clover	500 bags or 25,000 lbs.	5 oz.
Corn	500 bags or 25,000 lbs.	2 lbs.
Cotton	500 bags or 25,000 lbs.	2 lbs.
Fescue	500 bags or 25,000 lbs.	5 oz.
Lespedeza	500 bags or 25,000 lbs.	5 oz.
Okra	200 bags or 10,000 lbs.	4 oz.
Cowpeas	500 bags or 25,000 lbs.	2 lbs.
Peanuts	500 bags or 25,000 lbs.	2 lbs.
Small Grains:		
Barley	24,000 lbs.	2 lbs.
Oats	32,000 lbs.	2 lbs.
Rye	28,000 lbs.	2 lbs.
Triticale	24,000 lbs.	2 lbs.
Wheat	30,000 lbs.	2 lbs.
Soybeans	30,000 lbs.	2 lbs.

Note: Varietal purity determination is not possible on seed which has been treated with some pesticides. If a pesticide is to be used which coats or colors the seed, a sample of the conditioned, untreated seed must be submitted for purity analysis and a sample of the conditioned, treated seed must be submitted for the germination test.

- B. Sampling of conditioned seed for certification may be accomplished by any of several approved methods, but the primary consideration should be that the sample is as representative of the seed as possible. The signature of the applicant for certification is affidavit that he and the conditioner of his seed are familiar with and will draw samples for certification in accordance with one of the following approved sampling methods:
1. If seed is sampled during conditioning, the most representative sample can be obtained with an automatic sampling device in the flow of conditioned seed or by taking a small portion of seed by hand from the top of each bag before it is closed. When conditioning of a lot is complete (see maximum lot size, item A) the seed taken

from each bag should be thoroughly mixed and a sample of the seed required for testing (see size of sample required, item A) taken from this seed.

2. If seed is sampled after conditioning and closing of bags, a probe or trier long enough to reach all areas in the bag shall be used for free flowing seed. When sampling closed bags in quantities of one to six bags, a sample shall be composed of a core from each bag for a total of at least five cores for each sample. For lots of more than six bags, sample five bags plus at least 10% of the number of bags in the lot. Regardless of lot size, it is not necessary to sample more than thirty bags.
3. If seed is sampled after conditioning and is to remain in bulk it shall be sampled by inserting a long probe into the seed at well distributed points throughout the bulk. Sufficient seed must be obtained from the bulk conditioned seed to provide the same number of samples required from the seed as if it were being bagged. (See VII, A.).
4. Note: Federal Seed Act Regulations require maintenance of a complete record on each lot, including a sample representing each lot transported or delivered for transportation in interstate commerce. Records and samples are to be kept for three (3) years, except that any sample may be discarded one (1) year after the entire lot has been disposed of by the person transporting or delivering the seed for transportation in interstate commerce.

It is advisable to retain a sample regardless of where the seed is sold.

- C. The Seed Certification Department and its designated representatives shall have the authority, without prior notice, to sample conditioned certified seed while the seed is on the premises of or remains the responsibility of the seedsman whose name appears on the certification labels or bulk sale certificate.

The producer or conditioner, depending on location of the seed, is expected to stack and store conditioned certified seed to permit reasonable access for random sampling of the lots available in accordance with procedure outlined in B. 2 and 3 of this section of standards. "Reasonable access" as used herein is interpreted as being afforded access to sample at random a representation of the lots of certified seed in a warehouse or other facility without causing undue inconvenience to the conditioner or producer.

- D. The South Carolina Department of Agriculture (SCDA) is designated by law as the only official laboratory for testing certified seed samples in South Carolina. Certified seed labels or bulk sale certificates will be issued only on the basis of "Official Sample" tests by the SCDA.
1. Each applicant whose fields meet certification standards will be furnished "Official Sample" stickers which must be attached to certified seed samples submitted to the SCDA for testing. The detailed "Official Sample" analysis must be performed on certified seed samples to determine that seed standards of the certification program are met.
 2. Analyses performed on more than one sample taken from a given quantity of seed, without some form of reconditioning (recleaning, treating, etc.) shall be averaged to determine acceptance or rejection of the seed for certification.
 3. Note: It is a violation of the S.C. Seed Law to offer seed for sale or distribution before it has been analyzed in accordance with the provisions of the S.C. Seed Law.

VIII. GROW-OUT TESTS

As an additional check on effectiveness of the certification program, the Seed Certification Department will routinely sample conditioned certified seed and plant the seed to determine that seed purity is being maintained and that producers or conditioners are sampling properly. In all cases where possible, grow-out plantings of these samples will be planted immediately adjacent to plantings from samples of the same lots which producers or conditioners submitted to the S.C. Department of Agriculture Seed Laboratory for purity and germination tests. Plantings from these two samplings of the same lot of seed will be expected to vary little when planted side by side. Obvious variation will be interpreted as failure of the producer or conditioner to obtain a representative sample of the lot. In such cases the producer or conditioner will be notified of the need to implement measures to insure representative sampling. Failure of a producer or conditioner to implement measures to insure representative sampling of lots will result in loss of the privilege to produce or condition certified seed until necessary corrective measures are taken.

IX. LABELING

A. Bag and Bulk Bin Labels

1. All classes of certified seed offered for sale shall have the official certification label or bulk bin label properly affixed to each bag or container except for vegetable seeds in containers of 5 pounds or less, for which the labels need not bear the name of the kind and variety, provided the name of the kind and variety is shown elsewhere on the containers. Even if all standards have been met, seed will not be considered certified unless properly labeled.

All information the grower is required to provide to complete certification must be on file with the Seed Certification Department before certification labels or bulk bin labels will be issued.

2. The certification label or bulk bin label attached to each bag or container serves as evidence of the genetic purity, identity, mechanical purity and germination of the seed contained therein. The following colors of labels shall be used to designate classes of seed:
 - a. White for Foundation class.
 - b. Purple for Registered class.
 - c. Blue for Certified class.
3. Certification labels or bulk bin labels must be obtained from the Seed Certification Department.

Proper attachment of labels or bulk bin labels shall be the responsibility of the person for whom the seed is being certified. Labels must be attached only to the lot of seed actually sampled and tested and for which the labels or bulk bin labels were specifically issued. The lot number on the label must be the same as the lot number on the bag. (See VI.B. 2. [b])

When requested, certification labels will be issued prior to conditioning provided the grower realizes that the S.C. Seed Law requires testing of the seed before it can be offered for sale or distribution. If certification labels are attached to seed during conditioning but the seed, when analyzed, does not meet certification standards, the labels must be removed and returned to the Seed Certification Department.

If certified seed is sampled in the seed trade by the S.C. Department of Agriculture and a STOP ORDER is issued against the seed, the certification labels must be removed and returned to the Seed Certification Department.

4. The certification label shall be attached to the container in a manner which prevents easy removal and reattachment.
 - a. With fabric bags or open top paper bags it is recommended that the label be sewn on, or in the top of the bag.
 - b. With valve filled paper bags and plastic bags or containers (including metal) it is recommended that the labels be glued to the container with an adhesive which prevents removal without destroying the label.
 - c. The label may be printed directly on the container, if control of such containers can be maintained by the certifying agency.
 - d. Closing of paper, plastic and metal containers will vary. The most satisfactory method is that of cementing the closure with an adhesive (glue, pressure-sensitive, thermo-plastic, etc.) which prevents entry to the container without leaving noticeable evidence of such tampering. Cementing the certification label over the enclosure is recommended where practicable.

5. If reconditioning of a lot of certified seed becomes necessary for any reason, certification labels attached to it may not be reused.

B. Bags

1. All classes of certified seed offered for sale shall be bagged in official certification bags or in bags approved by the Seed Certification Department. It is desirable that bags other than official certification bags bear a brand name or emblem. Only new bags may be used for all classes of certified seed.
2. When seed is bagged in official certified bags but found not meeting certification standards when analyzed, the seed must be re-bagged in non-certified bags, or the bag must be defaced to the extent that all mention of certification, the Seed Certification Department and Clemson University is obliterated.

Official Note: It is a violation of the SC Seed Law to offer for sale or distribution in official certification bags and bearing no official certification label, seed that fails to meet SC Certification Standards.

X. SALE OF CONDITIONED SEED IN BULK

- A. Conditioned S.C. Registered and Certified classes of small grain or soybean seed may be sold in bulk by growers who are Approved S. C. certified seed conditioners or growers with their own conditioning equipment.
- B. All field and seed standards applying to bagged seed shall apply to bulk Registered and Certified seed.
- C. Only one sale of bulk Registered or Certified seed is permitted.
- D. Each bin or container of bulk conditioned seed which is ready for sale or which is being transferred to storage for sale must be labeled with a S.C. Bulk Registered or Certified Seed Label and Inventory form. This form must be obtained from the Seed Certification Department. One copy is to be attached to the bin or container, one copy is to be maintained by the Conditioner in his files and one copy is to be provided the Seed Certification Department.
- E. Whenever a sale is to be made from bulk conditioned seed a copy of the form Bulk Conditioned Seed Sale Certificate for S. C. Registered or Certified Seed must be obtained from the Seed Certification Department, completed, signed and issued to the purchaser to accompany the seed at the time of purchase. One copy must be retained in the conditioner's files and one copy must be mailed to the Seed Certification Department.
- F. Conditioned seed to be sold in bulk must be sampled in accordance with sampling procedure specified in VII. B. 3.

XI. SUBSTANDARD SEED IN EMERGENCIES

It is recognized that in emergency situations caused by such things as adverse weather conditions, certain lots that would be needed to provide an adequate seed supply would be lost if regular certification standards are enforced. Under such

circumstances, seed failing to meet certification standards other than those affecting genetic purity, may be certified when approved by the Seed Certification Department, provided there is no injury to the reputation of certified seed. The certification label or bulk bin label attached to such seed shall clearly show in what respect the seed does not meet certification standards. Substandard labeling provisions will be invoked only when warranted by the condition of an entire crop, variety or class of seed.

XII. COMPLYING WITH FEDERAL AND STATE SEED LAWS

Responsibility for any obligations arising from the sale or shipment of certified seed rests with the grower or subsequent handler making the sale or shipment. Responsibility for compliance with the seed labeling requirements of the country, state or province into which certified seed is shipped rests with the seller.

XIII. GROWER OR VENDOR RESPONSIBILITY

D. The grower or vendor whose name appears on the certification label or bulk sale certificate guarantees to the first buyer that the seed to which the label is attached or which the bulk sale certificate accompanies is a part of the lot designated on the label or bulk sale certificate and is a part of the lot(s) of seed represented by samples which have met all requirements for certification.

E. Responsibility for compliance with certification requirements for seed to which a certification label or bulk sale certificate is attached and responsibility for proper use of certification labels for bulk sale certificates rests, in all cases, with the seedsman whose name appears on the label or bulk sale certificate.

XIV. PRODUCER RECORDS

It is the responsibility of each grower of certified seed to maintain an accurate record of all sales including the name of purchaser and address, lot numbers, amount and date. The Seed Certification Department has the right to call for specific sales records and will periodically conduct random examinations of sales records. Failure to supply such records, when requested, or failure to give satisfactory reasons for being unable to supply such records, shall forfeit a grower's privilege to produce certified seed.

XV. INTERAGENCY CERTIFICATION

F. Interagency certification is the participation of two or more official certifying agencies in performing the services required to certify the same lot or lots of seed. South Carolina Seed Certification Standards or comparable standards of other official seed certifying agencies must be met if the Seed Certification Department is to issue interagency certification labels. This

includes the requirement that all certified seed to be labeled by the Seed Certification Department must be analyzed by the S. C. Department of Agriculture Seed Testing Laboratory.

- G. Only those varieties declared eligible for certification by the Seed Certification Department or another official seed certifying agency will be eligible for interagency certification in South Carolina.
- H. Seed to be recognized for interagency certification must be received in containers carrying official certification labels, or if shipped for conditioning, carry evidence of its eligibility from another official certifying agency, together with the following information:
 - 0. Variety (if certified as to variety) and kind
 - 1. Quantity of seed (pounds or bushels)
 - 2. Class of seed
 - 3. Inspection or lot number traceable to the previous agency's records
- I. Interagency certification labels shall carry the certification identification number and clearly identify the certifying agencies involved, the variety, the kind and class of seed, except for vegetable seed in containers of 5 pounds or less, for which the labels need not bear the name of the kind and variety and agencies involved provided the name of the kind and variety and agencies involved are shown elsewhere on the containers.

27-195. VEGETATIVELY PROPAGATED FORAGE GRASS STANDARDS

APPLICATION OF GENERAL CERTIFICATION STANDARDS

- . The General Certification Standards, Clemson University Regulation 27-190, are basic and applicable.
- A. The General Standards are modified as follows:

Classes of Seed Recognized (I)

Fields planted with Foundation or Registered sprigs may be eligible for the production of sprigs. Seed production by all generations must be prevented.

- a. Foundation sprigs shall be the initial transplants from breeder vegetative propagating material.
- b. Registered sprigs shall be the initial transplants from Foundation sprigs.
- c. Certified sprigs may be the initial transplants from either Foundation or Registered sprigs.

I. LAND REQUIREMENTS

A field to be eligible for the production of all certified classes of sprigs must be inspected prior to planting and found free of other strains of the same species or other objectionable species.

II. FIELD INSPECTION

An inspection shall be made during the growing season at a time when it is possible to identify any other perennial grasses and/or strains or objectionable weeds that may be present.

III. FIELD STANDARDS

A. General

1. Unit of Certification

The entire acreage at the time of inspection must be inspected as a unit from a map showing the exact specifications and permanent location of the field.

2. Isolation

A field to be eligible for certification must be isolated from any other perennial grass by a barrier that will prevent encroachment or mechanical mixing during harvest.

B. Specific

	<u>Maximum permitted in 1000 square feet</u>		
	<u>Foundation</u>	<u>Foundation</u>	<u>Certified</u>
Other Varieties	None	1	3

IV. PLANT STOCK STANDARDS (PERCENTAGES TO BE DETERMINED BY COUNT)

Pure living sprigs (minimum by count)	90.0%
Other living plants (maximum by count)	2.0%
Total objectionable weeds (maximum)	None
Noxious weeds (maximum)	None

V.

VI. The producer of all classes of vegetatively propagated pasture grasses shall furnish the first purchaser a document indicating class of sprigs, quantity, and date of digging.

I. APPLICATION OF GENERAL CERTIFICATION STANDARDS

A. The General Seed Certification Standards Clemson University Regulation 27-190, are basic and applicable. The following specific standards constitute the standards for certification of vegetatively propagated turfgrasses, bermudagrass, centipede, zoysia, St. Augustine and seashore paspalum.

B. The General Standards are modified as follows:

1. Foundation Turf - shall be the vegetative increase of Breeder or Foundation turf.
2. *Registered Turf - shall be the vegetative increase of Foundation turf.
3. Certified Turf - shall be the vegetative increase of Foundation or Registered turf.
4. Life of Stand: The life of the stand will continue for all classes of vegetatively propagated turf grasses as long as the varietal and mechanical purity for the class is maintained.

*A grower of Registered turf may increase his acreage of Registered turf from his own production provided the increase is adjacent and planted on land under the control of the grower. The size of such increase is not to exceed a total of ten (10) additional acres.

II. LAND REQUIREMENT:

- A. A field to be eligible for the production of Foundation, Registered or Certified turf must be free of contaminating grasses, weeds and other crops.
- B. Land for production of Foundation or Registered sod shall be fumigated with a recommended soil fumigant.

III. FIELD INSPECTION

A. Handling the crop and planting and prior to inspection.

A field must be rogued and/or sprayed during the growing season to remove (1) other varieties, (2) other perennial grasses, (3) most common weeds, (4) objectionable and noxious weeds.

B. Time and number of inspections:

1. A minimum of three inspections will be required.
2. Fields must be inspected prior to planting to insure the field is free of contamination.

IV. FIELD STANDARDS:

A. General

1. Unit of Certification

A field or portion of a field may be certified.

2. Isolation requirements:

Plantings of vegetatively propagated turf grasses must be isolated from any other variety and other perennial grasses by an artificial barrier and/or strip at least six (6) feet wide to prevent mixing during the growing season and harvesting operation.

B. Specific Requirements

Factor	<u>Maximum permitted in each class***</u>		
	Foundation	Registered	Certified
*Other Varieties	None	None	1/acre
**Other Crops	None	None	None
Noxious/Objectionable Weeds	None	None	None
Other living plants (max.)	100	200	400

*Other varieties shall consist of all other varieties of the kind being produced.

**Other crops shall consist of all other kinds and varieties of perennial grasses.

***Should other varieties, other crops and/or noxious weeds be found in excess of standard during field inspection, roguing and eradication by spot spraying will be permitted to bring turf in line with standards.

V. TURF STANDARDS

Objectionable or Noxious Weeds..... None

INSTRUCTIONS AND PROCEDURES

6. An official certificate or label will accompany each shipment of certified sprigs, sod or plugs.

7. A complete record on the amount of certified turf sales will be maintained and made available to the official certifying agency. The record will include (a) class of certified turf sold (Foundation, Registered, or Certified), (b) Kind and Variety, (c) field number,

(d) date of harvest, (e) amount of turf shipped (square feet, cubic feet, bushels, etc.).

27-198. OKRA CERTIFICATION STANDARDS

VIII. APPLICATION OF GENERAL CERTIFICATION STANDARDS

The General Certification Standards, Clemson University Regulation 27-190, are basic and applicable.

IX. LAND REQUIREMENTS

Okra shall not be eligible for certification if planted on land where okra was grown the previous year unless the preceding crop was planted with certified seed of the same variety of an equal or higher seed class.

X. FIELD INSPECTION

A field inspection shall be made at such time the characteristics of the variety being inspected can best be distinguished from those of another variety.

XI. FIELD STANDARDS

A. General

1. A field shall be the unit of certification.
2. Isolation

To be eligible for certification, a seed field must be isolated from fields of any other variety or fields of any other variety or fields of the same variety that do not meet the varietal purity requirements for certification as follows:

<u>Class</u>	<u>Feet</u>
Foundation	1,320
Registered	1,320
Certified	825

B. Specific

	<u>Maximum Permitted - Ratio of Plants</u>		
Factor	Foundation	Registered	Certified
Other Varieties			

-definite	None	1:1400	1:7000
-doubtful	None	1:4800	1:2400

XII. SEED STANDARDS

Factor	<u>Standards For Each Class</u>		
	<u>Foundation</u>	<u>Registered</u>	<u>Certified</u>
Pure Seed (min.)	N.S.	98.00%	98.00%
Inert Matter (max.)	N.S.	2.00%	2.00%
*Weed Seeds (max.)	0.05%	0.05%	0.10%
**Objectionable or noxious weed seeds (max.)	None	None	None
Total other crop seeds (max.)	None	0.02%	0.07%
Other varieties (max.)	None	0.01%	0.05%
***Other kinds (max.)	None	0.01%	0.02%
Germination and hard seed (min.)	N.S.	70.00%	70.00%

*Total weed seeds shall not exceed 5 seeds per lb. in Foundation and Registered; 10 per lb. in Certified.

**Objectionable weed seeds shall include weed seeds inseparable in processing.

***Other kinds shall not exceed 2 seeds per lb. in Registered; 3 per lb. in Certified

N.S. - No Standards

XIII. SIZE OF LOTS

For the purpose of issuing certification tags, the standard lot size for okra shall be a maximum of 200 bags or 10,000 lbs.

XIV. SIZE OF OFFICIAL SAMPLE

A 4 oz. Sample of okra is required for official purity and germination tests by the S. C. State Department of Agriculture.

27-1000. PEANUT SEED CERTIFICATION STANDARDS

I. APPLICATION OF GENERAL CERTIFICATION STANDARDS

The General Certification Standards, Clemson University Regulation 27-190, are basic and applicable.

II. LAND REQUIREMENTS

Peanuts shall be planted on land on which the previous crop was of another kind or planted with certified seed of the same variety.

III. FIELD INSPECTION

A field inspection shall be made at such time factors affecting certification can best be evaluated.

IV. FIELD STANDARDS

A. General

1. Unit of Certification

The unit of certification shall be a field or a portion of a field.

2. Isolation

An isolation of ten feet from other varieties or from peanuts grown from uncertified seed of the same variety shall be required.

B. Specific Requirements

Factor	<u>Maximum Permitted in Each Class</u>		
	Foundation	Registered	Certified
Other	1:1000	1:500	1:200

Varieties*

*Other varieties shall be considered to include off-type plants that can be differentiated from the variety that is being inspected.

V. SEED STANDARDS

Factor	<u>Standards for Each Class</u>		
	Foundation	Registered	Certified
Pure Seed (min.)	N.S.	97.00%	97.00%
*Inert Matter (max.)	N.S.	3.00%	3.00%
**Weed Seeds (max.)	.01%	.01%	.01%
Objectionable or Noxious Weed Seeds.	None	None	None
Other Crop Seeds	0.11%	.21%	.52%
***Other kinds (max.)	0.01%	.01%	.02%
Other varieties (max.)	0.10%	.20%	.50%
Germination & hard seed (min.)	N.S.	70.00%	70.00%

*Spanish-type, runner-type and Virginia-type seed peanuts may include an additional 3.0% inert or 'bald head' (seed coat removed) seed.

**Total weed seeds shall not exceed 5 per lb.

***Other kinds shall not exceed 2 per lb for Foundation and Registered, and 3 per lb for Certified.

VI. SIZE OF LOTS

For the purpose of issuing certification labels the standard lot size for peanuts shall be a maximum of 500 bags or 25,000 lbs.

VII. SIZE OF OFFICIAL SAMPLE

A 2 lb. sample of peanuts is required for official purity and germination tests by the S.C. State Department of Agriculture.

27-1001. SWEET POTATO CERTIFICATION STANDARDS

I. APPLICATION OF GENERAL CERTIFICATION STANDARDS

The General Certification Standards, Clemson University Regulation 27-190, are basic and applicable.

II. LAND REQUIREMENTS

- A. Sweet potato stock eligible for certification must be produced:
 - 1. On land which did not produce sweet potatoes during the past three years.
 - 2. On land that did not receive manure or sweet potato residue during the past three years.
 - 3. On land not subject to drainage water from fields that are now growing or have grown sweet potatoes during the last three years.
- B. Sweet potato land shall be treated by approved methods for the control of wireworms and other soil insects where they are known to be a problem.
- C. Plant Bed Requirements
 - 1. The plant bed must be located on well drained soil that has not produced sweet potatoes within the last three years unless disinfected by approved methods. The land must not be subject to drainage from barnyards or poultry yards or fields that are now or have grown sweet potatoes during the past three years.
 - 2. Manure must not be used in the plant bed.
 - 3. Seed sweet potatoes must be treated with an approved pesticide prior to planting.

III. FIELD INSPECTION

A. Plant Bed

One inspection shall be made when plants are nearly large enough to transplant.

B. Field

At least two field inspections shall be made, one shortly after transplanting of sprouts cut from the bed or vine cuttings. The final field inspection shall be performed at least 21 days after the first inspection and when diseases and varietal mixtures can be most easily detected.

IV. FIELD STANDARDS

A. General

- 1. Unit of Certification

A field or a portion of a field.

2. Isolation

All fields producing a class of certified seed potatoes shall be isolated from other sweet potato fields in such a manner as to prevent mechanical mixture.

3. Planting stock requirements

- a. Certified sweet potatoes must be produced from either vine cuttings or from sprouts cut from the bed.
- b. Sprouts must be cut approximately 1 inch above the soil surface, using a knife which has been disinfected.

B. Specific Requirements

Factor	<u>Maximum Permitted in Each Class</u>		
	Foundation	Registered	Certified
Plant bed			
Blackrot	None	None	None
Wilt	None	None	None
Other Varieties	None	None	None
Scurf	None	None	None
Field			
Wilt	None	None	5 plants/ac.
Viruses	None	None	10plants/ac.
*Other Varieties	None	None	None

*Five plants current mutations allowed.

C.

V. SEED AND STORAGE STANDARDS

A. Seed

- 1. At least one storage inspection shall be made.
- 2. Seed stock must conform to the minimum standards for U.S. No. 1 grade except that minimum size shall not be less than 3 inches in length and 1 1/4 inches in diameter, and shall not exceed 10 inches in length and 3 3/4 inches in diameter.*

*Specific sizes of sweet potatoes in accordance with Federal Regulations shall be optional to grower and purchaser.

3. Root Standards

Factor	Foundation	<u>Maximum Permitted</u>	
		Registered	Certified
Common Storage Rots	None	None	None
Blackrot	None	None	None
Scurf	None	None	0.1%
Wilt	None	None	0.1%
Internal Cork	5.0%	5.0%	5.0%
Nematode*	None	None	.5%
Wireworm*	1.0%	2.0%	5.0%
Sweet Potato Weevil	None	None	None
Other Varieties	None	None	0.1%

*Tolerance applied to severely infected roots.

B. Storage

1. Storage potatoes grown for certification shall be stored in new containers, or used containers that have been disinfected with an approved pesticide.
2. Sweet potatoes must be stored in a facility that has been cleaned and disinfected.
3. Each unit of sweet potatoes that passes field inspection shall be stored according to production unit and treated separately and distinctly at the time of storage inspection. Each crate shall be marked or labeled to correspond with the field unit that passed inspection.

27-1002. SMALL GRAIN CERTIFICATION STANDARDS

(WHEAT, OATS, BARLEY, RYE AND TRITICALE)

I. APPLICATION OF GENERAL CERTIFICATION STANDARDS

The General Certification Standards, Clemson University Regulations 27-190, are basic and applicable.

II. LAND REQUIREMENTS

A small grain crop shall be planted on land on which the last crop grown was of another crop kind other than small grains, or was planted with a class of certified seed of the same variety. A crop will not be eligible for certification if planted on land on which the same crop kind was grown the previous year unless the previous crop was grown from a class of certified seed of the same variety.

III. FIELD INSPECTIONS

A field inspection shall be made at such time factors affecting certification can best be evaluated.

IV. FIELD STANDARDS

A. General

1. Unit of Certification

The unit of certification shall be a field, but a portion of a field may be approved provided the discarded portion can be harvested separately and is eliminated from certification.

2. Isolation

a. Wheat, Oats, Barley, Triticale

A field shall be separated by a strip of ground adequate to prevent mechanical mixtures. The strip may be either mowed, uncropped or planted to some crop other than the kind being certified.

b. Wheat for certification must be isolated from a field of rye by a distance of 660 ft.

c. All barley and wheat fields for the production of all classes of certified seed must be isolated by a least 990 feet from other fields which contain smut in excess of the tolerance indicated in the specific field standards.

d. Rye

A field producing any class of certified seed must be isolated by at least 660 feet from rye fields of any other variety or fields of the same variety that do not meet the varietal purity requirements of the class of seed inspected

and are of the same chromosome number. Isolation between diploid and tetraploid rye shall be at least 15 feet.

B. Specific

	Foundation	Registered	Certified
Other varieties (max.)	1:3000	1:2000	1:1000
*Inseparable other crops (max.)	1:10,000	1:10,000	1:2000
**Objectionable weeds (max.)	None	None	None
Loose and covered smut	----	1:2000	1:1000

*Inseparable other crops shall include crop plants, the seed of which cannot be thoroughly removed by the usual methods of cleaning. Rye in wheat and barley in oats are well known examples.

**Objectionable weeds include all S.C. noxious weeds and others as designated by the Seed Certification Department.

V. SEED STANDARDS

	<u>Standards For Each Class</u>		
	Foundation	Registered	Certified
Pure Seed (min)			
Wheat, Barley, Oats	-	98.00%	98.00%
Rye	-	97.00%	97.00%
Triticale	-	96.00%	96.00%
Inert Matter (max)			
Wheat, Barley, Oats	-	2.00%	2.00%
Rye	-	3.00%	3.00%
Triticale	-	4.00%	4.00%
*Common Weed Seeds (max)	-	0.05%	0.05%
**Objectionable Weed Seeds (max)	None	None	None
***Other Crop Seeds (max)			
Other varieties same crop	1 seed/lb.	2 seeds/lb.	5 seeds/lb.

****Other small grains	1 seed/lb.	2 seeds/lb.	5 seeds/lb.
Other kinds of crops	1 seed/lb.	2 seeds/lb.	5 seeds/lb.
Germination (min)			
Barley, Oats, Wheat, Triticale	-	85.00%	85.00%
Rye	-	75.00%	75.00%
****Diseases	-	-	-

*For Common Weed Seeds a maximum of 20 per pound must not be exceeded in any class.

**Objectionable weeds shall include all S.C. Noxious Weeds and others as designated by the Seed Certification Department.

***For Other Crop Seeds, no combination of components may exceed 2 per pound in Foundation, 5 per pound in Registered or 10 per pound in Certified.

****For rye in Other Small Grains, standards shall be, 0 for Foundation, 1 for Registered and 2 for Certified.

*****If chemically controllable seed-borne diseases are noted upon field inspection or laboratory observation, seed treatment may be required.

VI. SIZE OF LOTS

For the purpose of issuing certification labels or bulk sale certificates, standard maximum lot sizes for small grains shall be as follows:

Barley	24,000 lbs. (500 bu.)
Oats	32,000 lbs. (1000 bu.)
Rye	28,000 lbs. (500 bu.)
Triticale	24,000 lbs. (500 bu.)
Wheat	30,000 lbs. (500 bu.)

VII. SIZE OF OFFICIAL SAMPLE

A 2 lb. sample of small grains is required for official purity and germination tests by the S.C. State Department of Agriculture.

27-1003. SOYBEAN CERTIFICATION STANDARDS

I. APPLICATION OF GENERAL CERTIFICATION STANDARDS

The General Certification Standards, Clemson University Regulation 27-190, are basic and applicable.

II. LAND REQUIREMENTS

Soybeans shall be grown on land on which the previous crop was of another kind, or planted with a class of certified seed of the same variety or with a variety of a contrasting pubescence or hilum color.

III. FIELD INSPECTION

A field inspection shall be made after leaves have dropped and prior to harvest. For Foundation class, a flower color inspection shall also be made.

IV. FIELD STANDARDS

A. General

1. Unit of Certification

The unit of certification shall be a field but a portion of a field may be approved provided the discarded portion can be harvested separately and is eliminated from certification.

2. Isolation

Fields of soybeans shall be separated from any other variety or uncertified seed of the same variety by a strip of ground not in soybeans and at least 5 feet wide.

B. Specific

Maximum Permitted-Ratio of Plants

	Foundation	Registered	Certified
Other varieties	1:5000	1:3000	1:2000

Weeds and other crops with inseparable seeds. Must be removed from field prior to harvest.

V. SEED STANDARDS

Standards for each class

Factor	Foundation	Registered	Certified
Pure Seed (min)	N.S.	98.00%	98.00%

Inert Matter (max)	N.S.	2.00%	2.00%
*Weed seeds (maximum)	0.03%	0.04%	0.05%
**Objectionable weed seed (maximum)	None	None	None
Total other crop seeds (maximum)	2/lb.	4/lb.	8/lb.
***Other varieties (max)	2/lb.	4/lb.	8/lb.
****Other kinds	1/lb.	1/lb.	2/lb.
*****Germination and hard seed (minimum)	N.S.	80.00%	80.00%

*Total weed seed shall not exceed 10 per pound.

**Objectionable weeds shall be S.C. noxious weeds and others designated by the Seed Certification Department.

***Off-colored beans due to environmental factors shall not be considered other varieties. Other varieties shall be considered to include off-type seeds that can be differentiated from the variety that is being analyzed.

****Corn, sunflower seed, maximum: Foundation-N.S.; Registered-None; and Certified-1 per pound; Cowpea Seed, Maximum: Foundation and Registered-None; Certified-1 per pound. The preceding cowpea standards apply for issuing certification labels. S.C. certified soybeans sampled by the S.C. Department of Agriculture (SCDA) or the Seed Certification Department after having been labeled must have the certification labels removed and all mention of certification eliminated on the bag if found containing any cowpeas in Foundation Seed, more than one cowpea per pound in Registered seed or more than two cowpeas per pound in Certified seed.

*****Germination for edible varieties may be lowered to 70.00%.
N.S.-No Standards

VI. SIZE OF LOTS

For the purpose of issuing certification labels or bulk sale certificates the standard maximum lot size for soybeans shall be 30,000 lbs.

VII. SIZE OF OFFICIAL SAMPLE

A 2 lb. sample of soybeans is required for official purity and germination tests by the S.C. Department of Agriculture. Note: If soybean seed are to be treated with a pesticide that coats or colors the seed, a sample of the untreated, conditioned seed must be submitted for the varietal purity analysis and a sample of the treated, conditioned seed must be submitted for the germination test.

27-1004. TOBACCO SEED (INCLUDING HYBRIDS) CERTIFICATION STANDARDS

I. APPLICATION OF GENERAL CERTIFICATION STANDARDS

- A. The General Certification Standards, Clemson University Regulation 27-190, are basic and applicable.
- B. The General Standards are modified as follows:

Production of Seed (V).

Handling of Crop Prior to Inspection

- 1. Plants of other varieties including off-type plants must be topped.
- 2. Plants affected with mosaic disease must be topped.
- 3. Plants affected with ring-spot disease must be topped as soon as found.

Labeling (IX)

Samples of all labels used on tobacco seed containers must be approved by and on file with the Seed Certification Department.

II. LAND REQUIREMENTS

A new plant bed must be used each year unless the bed is sterilized with a soil sterilant prior to seeding.

III. FIELD INSPECTION

A field inspection shall be made during the blooming period

IV. FIELD STANDARDS

A. General

1. Unit of Certification

A field or portion of a field may be certified if the area to be certified is clearly defined. Precautions must be taken to prevent contamination from the portion not certified.

2. Isolation

a. Self-pollinated varieties

Where two or more varieties of the same type are grown side by side in the same field,

four (4) border rows of each variety, between the two varieties, shall be allowed to bloom and set seed, but shall

not be harvested for seed. Otherwise there shall be 150 feet between varieties of the same type.

Isolation between varieties of different types shall be at least 1,320 feet except when protected from cross pollination by bagging or when all plants in the neighboring field are topped before blooming.

b. Hybrids

When producing hybrid tobacco seed of the same type when male fertile and male sterile varieties are grown side by side in the same field, four (4) border rows of the male sterile varieties adjacent to the male fertile varieties shall be allowed to bloom and set seed but shall not be harvested for seed except when the male fertile plants are to be used as the pollen parent on the adjacent male sterile plants. Otherwise, male sterile plants must be at least 150 feet from male fertile plants. Isolation between male sterile plants and male fertile plants of different types shall be at least 1320 feet, except when protected from cross pollination by bagging or when all plants in the neighboring fields are topped before blooming.

B. Specific

No seed bearing plants of off-types or other varieties or plants affected with mosaic and/or ring-spot disease are permitted.

V. SEED STANDARDS

Factor	<u>Standards for each class</u>		
	Foundation	Registered	Certified
Pure Seed (min.)	98.00%	99.00%	99.00%
Inert Matter (max.)	2.00%	1.00%	1.00%
Total weed seeds (max.)	None	None	None
Objectionable or noxious (max.)	None	None	None
Total Other Crop Seeds (max.)	0.01%	0.01%	0.01%
Other varieties (max.)	0.01%	0.01%	0.01%

Other kinds (max.)	0.01%	0.01%	0.01%
Germination and Hard Seed	N.S.	80.00%	80.00%

N.S.-No Standards