

APPENDIX 3

**Conditional Rice Straw Burning
Permit Program**

Sacramento Valley Basinwide
Air Pollution Control Council

Conditional Rice Straw Burning Permit Program

Sacramento Valley Basinwide Air Pollution Control Council

TABLE OF CONTENTS

I.	BACKGROUND AND INTRODUCTION	4
II.	OVERVIEW OF THE REGULATION	4
III.	SCOPE AND APPLICABILITY	5
IV.	PROGRAM DEFINITIONS	6
V.	QUALIFYING DISEASES	8
A.	CURRENT QUALIFYING DISEASES;.....	8
B.	OTHER DISEASES	8
VI.	ANNUAL BURN LIMITATIONS	9
A.	GENERAL LIMITATIONS	9
B.	AUTHORITY	9
C.	EXAMPLES	9
D.	EXCEPTIONS FOR SMALL GROWERS.....	10
E.	PROHIBITIONS.....	10
VII.	APPLICANT RESPONSIBILITIES	10
VIII.	AGRICULTURAL COMMISSIONER RESPONSIBILITIES	11
A.	STATISTICAL SIGNIFICANCE OF DISEASE USING BASELINE DISEASE LEVELS	12
B.	STATISTICAL SIGNIFICANCE OF DISEASE USING PREVAILING DISEASE LEVELS	12
C.	AGRICULTURAL COMMISSIONERS ANNUAL DISEASE PROCESS	13
D.	PERIODIC EVALUATIONS OF PREVAILING DISEASE LEVELS	13
E.	DETERMINATION OF TERMS AND CONDITIONS	14
F.	DISEASE SIGNIFICANCE THRESHOLDS	15
G.	USE OF ALTERNATIVE INSPECTORS	16
H.	RECORD RETENTION.....	16
IX.	INSPECTION METHODS AND PROCEDURES	17
A.	BASIC INSPECTION CRITERIA	17
B.	BIASED/UNBIASED COMBINATION INSPECTION PROCEDURE.....	17
C.	VISUAL ASSESSMENT INSPECTION PROCEDURE.....	18
D.	SOIL SAMPLING PROCEDURE	18
E.	FUTURE PROCEDURE	19
X.	DISEASE INSPECTION TRAINING AND CERTIFICATION PROGRAM	19
A.	CURRICULUM.....	19
B.	TRAINING LOCATIONS AND MATERIALS	20
C.	INSTRUCTORS	20
D.	CERTIFICATE OF TRAINING COMPLETION	20
E.	ADMISSION TO THE TRAINING PROGRAM.....	20
XI.	APCO RESPONSIBILITIES	21

XII. ENFORCEMENT PROVISIONS	21
XIII. DATA MAINTENANCE AND REPORTING REQUIREMENTS	21
A. DATA MAINTENANCE	21
B. PROGRAM REPORTING	22
APPENDIX A – OVERVIEW AND FREQUENTLY ASKED QUESTIONS	1
APPENDIX B – STATISTICAL METHOD FOR DETERMINATION OF PREVAILING DISEASE LEVELS.....	1
APPENDIX C – AGRICULTURAL COMMISSIONER'S DETERMINATION OF TERMS AND CONDITIONS.....	1
APPENDIX D – BIASED/NONBIASED COMBINATION INSPECTION PROCEDURE AND MAP	1
APPENDIX E - VISUAL INSPECTION PROCEDURE AND MAP	1
APPENDIX F – SOIL INSPECTION PROCEDURE AND MAP	1
APPENDIX G – CURRICULUM FOR THE TRAINING AND CERTIFICATION PROGRAM.....	1
APPENDIX H – FORMAT FOR THE CERTIFICATE OF COMPLETION.....	1
APPENDIX I – PREVAILING DISEASE LEVEL INSPECTION FORM.....	1
APPENDIX J – COUNTYWIDE DETERMINATION OF SIGNIFICANT DISEASE LEVEL FORMS; BURN YEARS 2003-2005.....	1

I. BACKGROUND AND INTRODUCTION

Rice is the most widely planted crop in the Sacramento Valley Air Basin (Basin). The average annual planting is approximately 500,000 acres. After harvest, between two to three tons of straw remains per acre. Historically, growers have generally burned the straw for field sanitation purposes – especially to control common and destructive rice diseases known as stem rot and aggregate sheath spot. In recent years, another destructive disease, rice blast, has been found in the Basin. The preferred burning period is the fall, shortly after harvest. However, the air is often stagnant and hazy during this time, presenting a great challenge to smoke dispersal.

Since 1983, fall burn smoke dispersal problems have been directly addressed by the BCC's Smoke Management Program (SMP). In addition, the Rice Straw Burning Reduction Act of 1991 (Act or "phase-down") required a series of larger and larger reductions in rice straw burning in the Basin. This requirement applies to anyone proposing to burn rice straw in Butte County, Colusa County, Glenn County, the western portion of Placer County, Sacramento County, Shasta County, Sutter County, Tehama County, Yuba County, Yolo County and that portion of Solano County contained within the Yolo-Solano Air Quality Management District.

While the initial Act did not address fall burning, a 1998 revision temporarily limited fall burning to 90,000 acres basin-wide until September 2001. Beginning in September 2001, the final stage of the phase-down takes effect. The Act limits burning to fields with confirmed rice disease and caps the amount at 125,000 acres per year or 25 percent of the planted acres in the Basin, whichever is less. The Act will no longer address fall burning directly, however the provisions of the SMP will continue to regulate fall burning based upon meteorological and air quality factors.

Section 41865 (e) of the Act required the California Air Resources Board (CARB) to adopt regulations to govern the Conditional Rice Straw Burning Permit Program (Program). CARB adopted this regulation on September 28, 2000.

II. OVERVIEW OF THE REGULATION

The regulation requires the BCC to adopt a Program that contains specific elements, including confirmation of disease by the local Agricultural Commissioner, significance thresholds for disease for the first two years of the program, field inspection procedures, annual reporting, and certification of rice disease inspectors. The BCC was required to submit the Program to CARB by February 15, 2001. This document sets forth the required Program and was adopted by the BCC at a public hearing on February 2, 2001. The BCC has incorporated the Program into the SMP. The CARB regulation allows the BCC to periodically revise the Program as appropriate.

The purpose of this Program is to implement the last stage of the Act by providing a uniform, scientifically based mechanism for rice growers in the Basin to obtain Conditional Rice Straw Burn Permits within the annual acreage limits provided under the Act. This program is intended to have the flexibility to adapt to changing disease conditions and scientific findings and to provide a reasonable and low-cost procedure for verifying disease in the fields.

The local Air Pollution Control Officer (APCO) may grant Conditional Rice Straw Burn Permits to burn rice straw in fields where rice disease was found in amounts likely to cause a quantifiable and significant reduction in rice yield in the current or upcoming growing season. The local Agricultural Commissioner must first establish the presence of the disease. The Agricultural Commissioner shall use the disease significance thresholds specified in the regulation (expressed as a percent of field-wide disease occurrence) to make the disease finding when the Program requires an Application for Determination of Terms and Conditions.

The Act requires the Agricultural Commissioner to be “responsible for all field inspections.” However, the regulation provides that the Agricultural Commissioner may delegate the inspections to private individuals who have successfully completed field inspector training and whose work the Agricultural Commissioner has verified for accuracy. This includes authority for growers to conduct self-inspections.

III. SCOPE AND APPLICABILITY

The primary purpose of the Program is to implement and ensure compliance with the basic requirements that each Agricultural Commissioner make a finding of a level of disease significant to satisfy the requirements of obtaining a conditional rice straw burn permit within the Basin. These requirements are established by subdivisions (b) through (h) of Title 17, CCR Section 80156. These requirements apply to growers, private inspectors, Agricultural Commissioners and APCOs. The Program also includes training provisions enabled by CCR Section 80157, which involve CARB, and an accredited school, such as the University of California Cooperative Extension.

The Program and its amendments shall be subject to CARB’s review and approval. The BCC requests that CARB and CDFA coordinate their annual responsibilities under CH&SC Section 41865 (h) with the development of this program and its amendments.

The Program includes data collection and reporting requirements enabled by CCR Section 80158 under which the BCC must begin reporting to CARB in 2002.

For purposes of efficiency and to provide for a public process that involves all interested parties such as rice growers, affected regulatory agencies, the

environmental community, and the public, the BCC will annually review the Program and will include the Program as part of or a referenced attachment to its Smoke Management Program.

IV. PROGRAM DEFINITIONS

Where applicable, this program will conform to the definitions provided in CCR Section 80101. The following definitions pertain uniquely to this program:

Baseline Disease Level:

The disease levels in a given County, District, or Geographic area during the 2001 and 2002 rice growing seasons as quantified through the compilation of Application for Determination of Terms and Conditions data.

Biased Inspection Site:

An inspection site chosen, at the discretion of a field inspector, based upon the presence or anticipated presence of disease symptoms.

Burn Season:

A continuous period of time commencing on September 1 of a given year and concluding on August 31 of the following year. Defined by the growing season during which the rice straw in the field was grown.

Conditional Rice Straw Burn Permit:

A permit issued by an APCO, on or after September 1, 2001, pursuant to CH&SC Section 41865(f) and (h) to conduct one burn, on one field, within one year or shorter time period.

Conditional Rice Straw Burn Permit Applicant:

The individual (or his/her agent) with control over the property containing the rice fields proposed for burning. For purposes of this program the term "Applicant" means both the applicant for the Agricultural Commissioner's Determination of Terms and Conditions or the Conditional Rice Straw Burn Permit Applicant.

Countywide Disease Certification

An annual declaration, made by a county Agricultural Commissioner, that all rice fields within the Agricultural Commissioner's jurisdiction are likely to contain rice diseases at levels which will cause a significant reduction in yield (in accordance with CCR, Title 17, Section 80156(b)).

Disease Significance Threshold:

An estimated amount of a qualifying disease expected to result in significant decreased grain production (during the current or next growing season). The amount must be expressed as a percentage of diseased stems.

Growing Season:

The period of time from seedbed preparation through crop harvest.

Maximum Annual Acreage Percentage (Defined by the Act):

A maximum percentage of a grower's rice straw acreage that a grower may burn under a Conditional Rice Straw Burning Permit during the year.

Maximum Annual Acres (Defined by the Act):

The maximum amount of rice straw acres that can be burned in the Basin under Conditional Rice Straw Burning Permits.

Prevailing Disease Level:

The current rolling average disease levels in a given County, District, or Geographic area calculated by adding the Agricultural Commissioner's annual random sampling and inspection data to the baseline disease level.

Proportional Acreage Cap (Defined by this Program):

The annual acreage cap assigned to each county or district that limits the amount of acres that can be burned under a Conditional Rice Straw Burn Permit.

Qualified Rice Disease Inspector:

Any person certified in accordance with the provisions of CCR Section 81057, other than agricultural commissioner staff, who conducts rice disease inspections on behalf of rice growers.

Qualifying Disease:

A rice disease that may cause significant yield loss and which the Secretary for the California Department of Food & Agriculture (CDFA) finds is controlled or effectively managed by the burning of straw, provided CARB and CDFA have not determined, in accordance with CH&SC Section 41865(h), that there are other economically and technically feasible alternative means of elimination that are not substantially more costly to the conditional rice straw burn permit applicant.

Unbiased Inspection Site:

An inspection site at a specific location prescribed by a method that does not consider the location or anticipated location of disease symptoms.

Year (Defined by this Program):

For purposes of this Program a burning year is the period from September 1 through August 31 of the following calendar year.

V. QUALIFYING DISEASES

A. Current qualifying diseases;

1. Stem Rot

Stem rot is a fungus the most widespread disease of rice in the Basin. It is caused by the fungus *Sclerotium oryzae*. The sclerotia infect the rice stem at the waterline. The disease overwinters in infected straw and soil.

Burning has historically been considered as effective control for this disease. It can also be controlled through mechanical straw removal. However this technique is comparatively expensive and presents the problem of straw disposal. Proper fertilizer management and winter field flooding can also reduce stem rot infection levels. Currently, no stem rot chemical controls are registered for use on rice in California.

2. Aggregate Sheathspot

Aggregate sheathspot is also a fungus (*Rhizoctonia oryzae-sativae*) and infects the rice plant at the water line. Like stem rot it overwinters in the straw and soil. Successful management of this disease is largely the same as that for Stem Rot, with burning being the most economical and thorough.

3. Rice Blast

Rice blast is also a fungus (*Pyricularia grisea*.) Lesions form on the plant and produce strands which in turn disperse spores that become windborne. In addition, rice blast can have many disease cycles per season. These characteristics make this fungus differ significantly from the two described above, in its ability to spread rapidly and heavily impact crops in one season. Rice blast can also overwinter in rice straw and can therefore be partly alleviated by burning. The semi-desert climate of the Basin generally does not favor great proliferation of rice blast.

B. Other Diseases

Diseases other than qualifying diseases do not qualify for a Conditional Rice Straw Burning Permit. A rice disease may become a qualifying disease if:

1. It may cause significant yield loss, and

2. The Secretary for the CDFA finds that the disease is controlled or effectively managed by the burning of straw, and
3. CARB and CDFA have not made a determination that there are other economically and technically feasible alternative means of eliminating the disease that are not substantially more costly.

VI. ANNUAL BURN LIMITATIONS

A. General Limitations

As early as practical in August of each year the BCC shall publish the following:

- the maximum annual acres of rice straw that can be burned in the Basin under Conditional Rice Straw Burning Permits, and
- the maximum annual acreage percentage of each grower's planted rice acres that may be burned under a Conditional Rice Straw Burning Permit for that year, and
- the proportional acreage cap for each district and county based upon their respective planted acreage.

B. Authority

The BCC will calculate the above general limitations pursuant to CH&SC Sections 41865 (c)(4) and (i) which state that in 2001 and thereafter, the maximum annual acres shall be the lesser of:

- The total of 25 percent of each individual applicant's planted rice acres in the Basin that year
- 125,000 acres

Each grower may be eligible to burn up to 25 percent of the grower's planted acres, as determined by the air pollution control officers in the Sacramento Valley Air Basin and subject to the maximum annual number of acres burned, if the grower has met the criteria for a conditional rice straw burning permit.

Planted acres will be determined by using data provided by either the USDA Farm Services Agency or the county Agricultural Department.

CH&SC Section (i)(3) further requires the BCC to determine the maximum percentage of these acres applicable to all growers applying for Conditional Rice Straw Burning Permits.

C. Examples

Ex. 1: The planted rice acres in the Basin = 525,000 acres.
~~25% of planted acres = 0.25 x 525,000 = 131,250 acres~~

~~Maximum annual burn acres = 125,000~~
~~Maximum annual acreage percentage = $125,000/525,000$~~
~~= 23.81%~~

Ex. 2: The planted rice acres in the Basin = 475,000 acres.
25% of planted acres = $0.25 \times 475,000 = 118,750$ acres
Maximum annual burn acres = 118,750
Maximum annual acreage percentage = 25%

D. Exceptions for Small Growers

Small growers, who own or operate 400 acres of rice or less, may burn the entire acreage once every four years, as long as that burning does not result in an exceedance of the maximum annual acres for the Basin.

APCOs who receive applications for permits to burn 100% of 400-acre-or-less operations must maintain documents showing that:

1. The applicant has not burned the acreage in the preceding three years
2. Burning the entire acreage did not cause the district to exceed the proportional acreage cap or cause the Basin to exceed the maximum annual acres.
3. The applicant met the requirements for obtaining a Conditional Rice Straw Burning Permit

E. Prohibitions

Rice growers may not transfer, sell, or trade rice acreage with any other individuals for purposes of obtaining Conditional Rice Straw Burning Permit.

VII. APPLICANT RESPONSIBILITIES

All persons applying for Conditional Rice Straw Burning Permits must have control over the property containing the rice fields proposed for burning or must be that person's agent. The person with this control is known as the "applicant" for purposes of this program.

Each applicant may only apply for Conditional Rice Straw Burning Permits for fields which have been verified as having rice disease. Rice disease may be verified in each field through completion of a Determination of Terms and Conditions for each field to be burned, or through a Countywide Disease Certification from the county Agricultural Commissioner.

The maximum number of acres planted in rice that may be burned in each air pollution control district or air quality management district (district) within

the Sacramento Valley Air Basin shall be determined by the BCC as early as practical in August of each year and shall be made available to the local APCO and Agricultural Commissioner. The Agricultural Commissioner in each county shall implement a specific disease evaluation procedure to support an independent finding, on an annual basis, that all rice fields within the Agricultural Commissioner's jurisdiction are likely to contain rice diseases a levels that are greater than one or more of the significance thresholds established pursuant to Section VIII.F; If the Agricultural Commissioner in any county makes such a finding, all fields in said county will qualify for a placement on a Conditional Rice Straw Burning Permit and a Determination of Terms and Conditions for each individual field to be burned shall not be required.

In the event that an Agricultural Commissioner cannot successfully make such a finding, an Application for Determination of Terms and Conditions shall be required for each field to be placed on a Conditional Rice Straw Burn Permit, the applicant may arrange for field inspections by a qualified rice disease inspector or by the Agricultural Commissioner, pursuant to one of the inspection methods described in this Program, for any acreage the applicant believes may qualify for a Conditional Rice Straw Burn Permit. Applicants may not transfer, sell or trade rice acreage with any other individuals for purposes of obtaining conditional Rice Straw Burning Permits.

The applicant, if in possession of a valid training certificate, may conduct his or her own field inspections. The applicant may also use another party, such as a Pest Control Advisor, if that party also possesses the valid training certificate. The certificates are described later in this document. Alternatively the applicant may ask the Agricultural Commissioner to perform the inspection. The Agricultural Commissioner has the authority to charge a fee to conduct these inspections.

After obtaining completed inspection reports, the applicant must fill out the Application for Determination of Terms and Conditions for Rice Straw Burning (see Appendix C). The applicant must submit this application to the Agricultural Commissioner along with the inspection reports. Once the Agricultural Commissioner has completed and signed this document the applicant may present it to the APCO in order to obtain a Conditional Rice Straw Burning Permit. When feasible the Agricultural Commissioner may forward the approved Determination of Terms and Conditions to the APCO and notify the applicant.

An overview of the applicant's responsibilities and frequently asked questions about the general process are shown in Appendix A.

VIII. AGRICULTURAL COMMISSIONER RESPONSIBILITIES

A. Statistical Significance Of Disease Using Baseline Disease Levels

During the 2003 rice growing season, each county Agricultural Commissioner shall implement the method established by Appendix B to support an independent finding for the 2003 burn season that all fields in his/her county satisfy the requirements for placement on a Conditional Rice Straw Burn Permit. The statistical significance of Baseline Disease Levels set forth in Appendix B of this Program shall be used in making such independent findings.

If the Agricultural Commissioner in a particular county cannot successfully make such a finding for his/her county, then an Application for Determination of Terms and Conditions shall be required for each field to be placed on a Conditional Rice Straw Burn Permit according to the requirements of Section VIII.E below.

B. Statistical Significance Of Disease Using Prevailing Disease Levels

During each of the 2003 and 2004 rice growing seasons, each county Agricultural Commissioner shall perform random sampling in their county, according to the requirements set forth in subsections 1-3 of this section, to support an independent finding for the following year's burn season that all fields in his/her county satisfy the requirements for placement on a Conditional Rice Straw Burn Permit. The statistical significance of Prevailing Disease Levels set forth in Appendix B of this Program shall be used in making such independent findings.

If the Agricultural Commissioner in a particular county cannot successfully make such a finding for his/her county, then an Application for Determination of Terms and Conditions shall be required for each field to be placed on a Conditional Rice Straw Burn Permit according to the requirements of Section VIII.E below.

1. Selection of Inspection Sites:

Each agricultural commissioner shall select inspection sites at random with a large spatial distribution of sites among the rice growing area of his/her county. This may allow for some detection of regional differences in prevailing disease levels.

2. Minimum Number of Required Inspection Sites:

The Agricultural Commissioner(s) in each county or geographic area (defined in Appendix B) shall annually inspect the number of rice fields corresponding to the planted acreage in their district or geographic area as defined by the following:

Acres Planted	Fields (minimum)	Samples (minimum)
< 50,000	6	18
50,000 - 100,000	10	30

> 100,000	15	45
-----------	----	----

Each field shall be not less than 50 acres in size.

3. Methods of plant/soil collection, counting, and scoring of rice plants, and collection, storage, and analysis of soil samples:

The Agricultural Commissioner in each district shall use the biased/unbiased Combination Inspection Procedure specified in Section IX.B to quantify qualifying disease levels in each rice field inspected but shall use only unbiased samples for making prevailing disease level inspections. All other plant collection, counting and scoring, and storage methods shall be completed as specified in Section IX. Each Agricultural Commissioner shall complete an Agricultural Commissioners Prevailing Disease Level Inspection Form (Appendix I) for each rice field inspected.

C. Agricultural Commissioners Annual Disease Process

Commencing in the 2005 growing season, and continuing through the 2010 growing season, each Sacramento Valley Agricultural Commissioner shall make an independent finding, on an annual basis as to whether or not all rice fields in his or her jurisdiction contain pathogens in sufficient quantities to constitute a rice disease. The finding shall be based on a statistical analysis of the prevailing disease levels data as specified in the Program. Each Sacramento Valley Agricultural Commissioner shall, by September 1 of each year, report in writing his or her disease finding to the BCC for the following burn season.

Commencing in 2011, each Agricultural Commissioner may reference the information contained in the periodic evaluation reports required in Section VIII.D in making the independent disease finding as required by Section 41865 of the California Health and Safety Code.

In any county or district where the Agricultural Commissioner is unable to make a countywide finding of significant disease presence an Application for Terms and Conditions approved by the Agricultural Commissioner shall be required for each field to be placed on a Conditional Rice Straw Burn Permit according to Section VIII.E of this Program.

D. Periodic Evaluations of Prevailing Disease Levels

Commencing in the 2010 growing season and continuing every five years thereafter the Sacramento Valley Agricultural Commissioners shall use a protocol for periodic evaluations of the existing levels of disease occurring in the region. The protocol shall be designed to evaluate any substantial change in the prevailing disease levels that may have occurred since the previous periodic evaluation. The

protocol shall include field inspections, literature review, and discussions with growers, regional technical experts, the University of California, the California Department of Food and Agriculture, and the California Rice Commission.

By December 31, 2010, and every five years thereafter, the Sacramento Valley Agricultural Commissioners shall submit a written report of their evaluations to the BCC. The conclusions contained in these periodic reports shall be used as the basis for annual countywide disease certifications for each of the following five (5) year's burn seasons until the next periodic evaluation is required. If the data collected does not support countywide disease certifications in any of the subject counties for each of the following five years, the Sacramento Valley Agricultural Commissioners may, at their discretion, resume in-field inspections as described in section VIII. B or require an Application for Determination of Terms and Conditions for each field to be placed on a Conditional Rice Straw Burn Permit according to the requirements of Section VIII.F below.

E. Determination of Terms and Conditions

Applicability: a Determination of Terms and Conditions is not required if the requirements of Section VIII, Part A, B, or C (above) have been met. The purpose of this option is to provide a process for individual field certifications if a countywide disease certification cannot be made for a particular county.

A Determination of Terms and Conditions is a document, signed by both the applicant and the Agricultural Commissioner, in which the Agricultural Commissioner makes the determinations described below. A Determination of Terms and Conditions is not a permit to burn. The applicant may apply for a Conditional Rice Straw Burn Permit once he or she is in possession of a signed Determination of Terms and Conditions or a district or countywide finding of significant disease presence has been made. The Application for the Determination of Terms and Conditions is shown in Appendix C. The information specified on this form is required by the CCR and may not be altered.

In order to approve the Application for Determination of Terms and Conditions for any field(s) proposed for burning, the Agricultural Commissioner must document that:

1. The field(s) are in his or her jurisdiction, and
2. He or she has made an independent determination, during the growing season, of a sufficient amount of a rice pathogen in the field(s) to constitute a rice disease, and

3. Based upon the inspection methods described in this Program, including the use of the Disease Significance Thresholds, that the existence of the pathogen(s) is likely to cause a significant, quantifiable reduction in yield in the field proposed for burning during the current or next growing season, and
4. The fields proposed for burning are specifically described, and
5. The applicant has not violated any provision of CH&SC Section 41865 within the previous three years. The Agricultural Commissioner shall rely, at a minimum, upon enforcement records maintained by the APCO with jurisdiction over any burn sites under the control of the applicant for the previous calendar years.

The Agricultural Commissioner shall make all reasonable efforts to complete his or her review of the application within three (3) business days.

F. Disease Significance Thresholds

A Disease Significance Threshold is an estimated amount, expressed as a percentage of diseased stems, of a qualifying disease expected to result in significant decreased grain production during the current or next growing season.

DISEASE SIGNIFICANCE THRESHOLDS	
Type of Qualifying Disease	Threshold
Stem Rot (<i>Sclerotium oryzae</i>) Aggregate Sheathspot (<i>Rhizoctonia oryzae-sativae</i>)	15 percent infected plants (cumulative)
Stem Rot Sclerotia (<i>Sclerotium oryzae</i>)	0.3 viable sclerotia/ gram soil
Rice Blast (<i>Pyricularia grisea</i>) – Neck blast only	1.8 percent infected plants
Other – Name(s) of additional qualifying diseases must first be published by the Secretary of CDFA. No such diseases are published as of 12-1-2000.	Professional judgement of Agricultural Commissioner

These disease significance thresholds shall be compared against inspection results averaged over the applicant's field proposed for

burning, in accordance with the Section IX below. If no disease significance threshold has been specified for the qualifying disease being evaluated by the Agricultural Commissioner, he or she shall use professional judgement in determining the significance of disease. If the disease is not a qualifying disease the Agricultural Commissioner may not consider it for purposes of making the Determination of Terms and Conditions.

If the Basin Agricultural Commissioners select a Disease Significance Threshold, through professional judgement, for qualifying diseases, other than those named in the table above, the Agricultural Commissioners shall provide a description of this judgement, in writing, to the BCC before issuing any Determination of Terms and Conditions document based upon such Disease Significance Threshold.

G. Use of Alternative Inspectors

In making the Determination of Terms and Conditions the Agricultural Commissioner may accept inspection reports from qualified rice disease inspectors, provided that the Agricultural Commissioner does the following:

1. Ensures that the inspector possesses the Certificate of Training Completion described below in Section X.
2. Reviews and evaluates the accuracy of all reports submitted by the inspector.
3. Conducts field inspections to confirm results of the inspector's reports on a minimum of five (5) per cent of all such reports each year.

The Agricultural Commissioner may honor the confirmations made by another Agricultural Commissioner.

H. Record Retention

The Agricultural Commissioner shall retain all Inspections reports performed for the purpose of district or countywide findings of significant disease presence and keep the documents available for public inspection for three years.

The Agricultural Commissioner shall retain all applications for the Determination of Terms and Conditions, field inspection reports and confirmations of field inspection reports, and copies of Certificates of Training and keep the documents available for public inspection for three years.

IX. INSPECTION METHODS AND PROCEDURES

A. Basic Inspection Criteria

For purposes of the Determination of Terms and Conditions, Agricultural Commissioners may only accept the results of inspection procedures included in this Program. The basic criteria for procedures approved by this Program include, but are not limited to:

- Protocol for selecting inspection sites.
- Number of required inspection sites.
- Methods of plant/soil collection.
- Methods of collection, counting, and scoring of rice plants.
- Methods of collection, storage, and analysis of soil samples.
- Procedures for calculating percentage of disease, if required, at specific inspection sites and use of this information to estimate average percentage of disease in a total field.
- Documentation of the inspection on a form approved under this Program

This Program includes the following inspection procedures:

B. Biased/unbiased Combination Inspection Procedure

This procedure and required inspection form and map for each field are provided in Appendix D. Key requirements and features of this procedure are as follows:

1. This procedure may be used for all qualifying diseases.
2. The inspector may use only one (1) biased inspection site for each field and may elect to qualify the field using only the biased site provided that he or she collects and scores a minimum of one hundred (100) stem samples from that site and calculates the average percentage according to the procedure in number 7 below.
3. The inspector must collect a minimum of fifty (50) stem samples at all inspection sites.
4. The inspector must maintain a minimum ratio of biased to unbiased sampling sites of one (1) to three (3) in fields of 50 acres or less, and one (1) to five (5) in fields of greater than 50 acres.
5. The inspector must determine the percentage of diseased stems at each inspection site.
6. The inspector must estimate the average percentage of

diseased plants for each field by adding the inspection site percentage values and dividing the sum by the total number of inspection sites.

7. The inspector may stop sampling after the biased site at any time if he or she determines that the average percentage of diseased plants would meet or exceed the Disease Significance Threshold with the remaining unsampled sites assumed to be zero percent.

C. Visual Assessment Inspection Procedure

The visual assessment inspection procedure and required inspection form are provided in Appendix E. Key requirements of this procedure are as follows:

1. Inspections shall be limited to fields with readily apparent macro symptoms for stem rot.
2. The inspector must assess and map the entire field for macro disease symptoms.
3. The inspector must inspect the field for micro disease symptoms at a minimum of one (1) biased site.
4. The inspector must inspect a minimum of five (5) groups of at least twenty (20) stems for micro disease symptoms at each site.
5. The inspector must estimate the average percentage of diseased stems at each biased site.

D. Soil Sampling Procedure

The soil sampling inspection procedure and required inspection form are provided in Appendix F. Key requirements of this procedure are as follows:

1. This inspection procedure is restricted to stem rot.
2. This procedure may combine biased and unbiased inspection sites.
3. The inspector may use a maximum of two (2) biased inspection sites per field.
4. The inspector shall collect a minimum of eight (8) soil samples per field, each at different locations.
5. The inspector shall maintain a minimum ratio of biased to unbiased sampling sites of one (1) to three (3).

6. The inspector shall submit the samples to determine the level of disease (in terms of average viable stem rot sclerotia per gram of soil) at each inspection site.
7. The disease level determination shall be in accordance with Webster's soil inoculum potential protocol for stem rot (Krause, R.A. & R.K. Webster, 1972, Mycologia 64:1333-1337).

E. Future Procedure

Effective June 1, 2003 or later, the BCC may approve, modify, or replace the inspection procedures described above as long as they retain provisions to confirm presence of disease in the fields proposed for burning.

X. DISEASE INSPECTION TRAINING AND CERTIFICATION PROGRAM

The BCC establishes and approves a program to train and certify rice disease inspectors. This training and certification is prerequisite for anyone wishing to become a qualified rice disease inspector.

A. Curriculum

The curriculum for the Training and Certification Program is shown in Appendix G. This curriculum was prepared by representatives of the University of California Cooperative Extension, in consultation with CDFR and CARB, and includes the following subject matter:

1. Commonly occurring qualifying and nonqualifying rice diseases.
2. Life cycle or etiology of rice diseases.
3. Inspection methods and their statistical limitations.
4. Techniques of prioritizing suitable test methods based upon field and disease characteristics.
5. Penalties associated with fraudulent inspections and/or related documentation.
6. Estimation of acreage of fields, acreage of inspection areas, and acreage of disease infected areas.
7. Webster's stem rot disease severity quantification protocol (Krause, R.A. & R.K. Webster, 1973, Phytopathology 63: 518-523).

8. Webster's soil inoculum potential protocol for stem rot (Krause, R.A. & R.K. Webster, 1972, Mycologia 64:1333-1337).
9. Disease survey and detection techniques.
10. Visual inspection indicators, if available, that meet the disease significance thresholds defined in section 80101.

B. Training Locations and Materials

Training locations and materials shall consist of, at a minimum:

1. Classroom training.
2. Color photographs of diseased plant material and descriptive text.
3. In-field inspections and inspection report preparation.
4. Sample collection and storage where applicable.

C. Instructors

Instructors for this training program shall be experienced agricultural professionals with extensive in-field pest inspection and identification experience. The BCC requests the University of California Cooperative Extension to provide instructors for implementation of the training program. The intent of this program is to accommodate "train the trainer" options that would enable the University to train representatives of other educational facilities, local Agricultural Commissioners, and similar facilities that could in turn provide training.

D. Certificate of Training Completion

The BCC also requests the University of California cooperative Extension to issue a Certificate of Training Completion to any individual who successfully demonstrates knowledge of the subject matter described in the curriculum. The format for the Certificate is shown in Appendix H.

E. Admission to the Training Program

Any individual, other than Agricultural Commissioners and their staff, wishing to perform rice disease inspections must possess a Certificate of Training Completion. Anyone may attend the training program unless that person previously possessed a Certificate that

has been revoked. The BCC encourages Agricultural Commissioners' staff to attend this training.

XI. APCO RESPONSIBILITIES

The APCOs in the Sacramento Valley Air Basin may grant Conditional Rice Straw Burning Permits on or after September 1, 2001, only after the Agricultural Commissioner has completed and documented his or her responsibilities as described below in this document.

The APCO may use his or her standard agricultural burn permit form, however that form must be clearly marked as a conditional permit and must show the following:

- Name and county of the Agricultural Commissioner who supplied the required Determination of Terms and Conditions (if required).
- Date of the Determination of Terms and Conditions (if required).

The APCO shall keep a copy of the Conditional Burn Permit and the Determination of Terms and Conditions for at least three years from the date the permit is issued.

The APCOs shall use the statistics described under the General Burning Limitations section of this Program to assist growers in ensuring that annual rice burning limitations are not exceeded. APCOs shall keep records showing the individual and cumulative acreage burned under Conditional Rice straw Burn Permits each year.

XII. ENFORCEMENT PROVISIONS

Any Agricultural Commissioner who finds evidence of false reporting or fraudulent inspections by a qualified rice disease inspector or any other person representing himself or herself as a qualified rice disease inspector shall document this evidence. The Agricultural Commissioner shall not accept inspection results from parties found to have made false or fraudulent inspections.

If an Agricultural Commissioner documents that any grower files a false inspection report, the Agricultural Commissioner shall forward this information to the local APCO with jurisdiction over the proposed burn site. The APCO shall evaluate the matter for violation of CH&SC Sections 41865 and 42402.2(b), district rules, or other penalties provided by law.

XIII. DATA MAINTENANCE AND REPORTING REQUIREMENTS

A. Data Maintenance.

Beginning by July 1, 2001 and continuously thereafter, the BCC shall collect and compile annual data including, but not limited to:

1. The total rice acreage planted in the Basin for the current year. The BCC will announce the total acreage and maximum burn percentage as early as practical in August of each year.
2. Total acres requested to be burned.
3. Total acres determined by county agricultural commissioners to meet the terms and conditions for burning.
4. Total acres approved for burning by the APCOs.
5. Total acres burned.
6. Total amount of planted acreage in the previous year.
7. Number of enforcement actions initiated for fraudulent inspections, and resolution of each.
8. Total amount of fees charged by each county agricultural commissioner.

The annual data collected shall be that data which pertains to each burn year from September 1 through August 31 of the following year. Data shall be grouped by county.

B. Program Reporting

Beginning in 2002 and annually thereafter, the BCC shall submit to the CARB and CDFA, by July 15, a report on program implementation. The report shall include, but shall not be limited to, the following information, by county:

1. General assessment of program operation.
2. The data listed in A. above.

APPENDIX A – OVERVIEW AND FREQUENTLY ASKED QUESTIONS

**APPENDIX B – STATISTICAL METHOD FOR DETERMINATION OF PREVAILING
DISEASE LEVELS**

**APPENDIX C – AGRICULTURAL COMMISSIONER'S DETERMINATION OF TERMS
AND CONDITIONS**

**APPENDIX D – BIASED/NONBIASED COMBINATION INSPECTION
PROCEDURE AND MAP**

APPENDIX E - VISUAL INSPECTION PROCEDURE AND MAP

APPENDIX F – SOIL INSPECTION PROCEDURE AND MAP

APPENDIX G – CURRICULUM FOR THE TRAINING AND CERTIFICATION PROGRAM

Item under development.

APPENDIX H – FORMAT FOR THE CERTIFICATE OF COMPLETION

Item under development.

APPENDIX I – PREVAILING DISEASE LEVEL INSPECTION FORM

**APPENDIX J – COUNTYWIDE DETERMINATION OF SIGNIFICANT DISEASE
LEVEL FORMS; BURN YEARS 2003-2005**