

## Appendix B

### STATISTICAL METHOD FOR COUNTY-WIDE DISEASE DETERMINATION

Each Agricultural Commissioner in the Sacramento Valley Air Basin may make a county-wide finding that all rice fields in his/her jurisdiction contain pathogens in sufficient quantities to constitute a rice disease which will result in a significant reduction in yield during the current or next growing season. Such a countywide finding would certify each rice field in the county or district for the placement on a Conditional Rice Straw Burn Permit by the Air Pollution Control Officer (APCO) with jurisdiction over the county or district.

Each Agricultural Commissioner shall be governed by the requirements of the Statistical Method (Method) set forth in this appendix when making a countywide finding of disease presence.

#### Baseline Disease Level Determination

During the 2003 burn season the Agricultural Commissioner shall use the baseline disease level in their county or district to determine the probability that a rice field with disease levels lower than the disease significance thresholds, as set forth in the Program, will be burned using the following equation;

$$P_b = (x_1 / n_1)$$

where  $n_1$  = total number of fields sampled in 2001 & 2002, and  
 $x_1$  = number of fields in 2001 & 2002 data sets with at least one non-biased sample and with an average score below 15 (initial biased sample and last sample in each field are not used to determine average).

When the probability of burning such a field is less than 5% the Agricultural Commissioner may make a countywide finding of disease presence for his/her county or district and certify all fields for placement on a Conditional Rice Straw Burn Permit during the 2003 burn season.

#### Prevailing Disease Level Determination

During each of the 2003 and 2004 growing season the Agricultural Commissioner shall combine the baseline disease level and the random sampling data, as defined in the Program, to determine the probability that a rice field with disease levels lower than the disease significance thresholds, as set forth in the Program, will be burned using the following equations;

During the 2003 grow season:

$$P_p = (75\% * (x_1/n_1) + 25\%(x_2/n_2))$$

where  $n_1$  = total number of fields sampled in 2001 & 2002, and

$x_1$  = number of fields in 2001 & 2002 data sets with at least one non-biased sample and with an average score below 15 (initial biased sample and last sample in each field are not used to determine average), and

$n_2$  = number of fields sampled in 2003, and

$x_2$  = number of fields in 2003 with an average score below 15.

When the probability of burning such a field is less than 5% the Agricultural Commissioner may make a countywide finding of disease presence for his/her county or district and certify all fields for placement on a Conditional Rice Straw Burn Permit during the 2004 burn season.

During the 2004 grow season:

$$P_p = (50\% * (x_1/n_1) + 50\%(x_2/n_2))$$

where  $n_1$  = total number of fields sampled in 2001 & 2002, and

$x_1$  = number of fields in 2001 & 2002 data sets with at least one non-biased sample and with an average score below 15 (initial biased sample and last sample in each field are not used to determine average), and

$n_2$  = total number of fields sampled in 2003 and 2004, and

$x_2$  = total number of fields in 2003 and 2004 with an average score below 15.

When the probability of burning such a field is less than 5% the Agricultural Commissioner may make a Countywide Disease Certification for his/her county or district and all fields for qualify placement on a Conditional Rice Straw Burn Permit during the 2005 burn season.

Beginning with the 2005 grow season the Agricultural Commissioner in each county or district shall begin making periodic evaluations of prevailing disease levels according to Section VIII.C of the Program.

**Table 1: Analysis of 2001+2002 Data**

County	Number of Fields Sampled (2001+2002) (n)	Number of Fields with usable data	Number of Fields with a score below 15 (x) <sup>4</sup>	Statistical probability that a non-qualifying field will be burned (x/n) <sup>5</sup>
Butte	854	188	2	0%
Colusa	1639	532	35	2%
Glenn/Tehama <sup>1</sup>	406	53	3	1%
Yolo/Sacramento	191	108	8	4%
Placer/Yuba <sup>2</sup>	136	60	0	0%
Sutter <sup>3</sup>	28	9	0	0%
Shasta	No Data			

1: Based on 2001 & 2002 Glenn County Data only. In order to make a complete determination, 2001 & 2002 Tehama County data are needed.

2: Yuba Data includes only 2002 inspections when 6 samples were taken in each field.

3: Sutter County Data includes only 2002 inspection data.

4: The score is the average of sample values with the first and last sample removed; each field sampled met the 15% disease threshold when all sample data was evaluated.

5: The total number of fields sampled (n), including those that did not have a usable number of samples, were used to determine this proportion because those fields without usable data almost always qualified for a conditional rice straw burning permit based on only one sample.

NOTE: The actual probability of burning a non-qualifying field will be lower than the statistical probability due to the Annual Burn Limitations which limits burning to no more than 25% of a growers planted acreage.

\*Counties with low planted acreage are grouped with their nearest similar neighbor and considered a multi-county region for the purposes of sampling schedule (Table 2) applicability.

**Table 2: Sampling Schedule**

Acreage Planted	# of Fields in sampling years	Total # of Samples (3 per field) in sampling years
< 50,000	6	18
50,000 – 100,000	10	30
> 100,000	15	45