

Appendix

Table 1. Determining CLB threshold printable datasheet

Field _____

Date collected _____

Crop or growth stage _____

T. julis parasitism rate _____

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
1	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
2	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
3	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
4	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
5	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
6	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
7	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
8	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
9	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Sample #	Tiller #	Tiller		Flag	
		Eggs	Larvae	Eggs	Larvae
10	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
Subtotal					

Calculation of CLB infestation level and comparison to known economic thresholds

CLB economic thresholds for small grains

- **Pre-boot (Feekes 1–8):** Average of 3 eggs or larvae per tiller (see Table 2)
- **Boot+ (flag leaf fully emerged, Feekes 9+):** Average of 1 larva per flag leaf (Table 3)

For current control recommendations, see the *Pacific Northwest Insect Management Handbook*, <https://pnwhandbooks.org/insect/agronomic/small-grain/small-grain-cereal-leaf-beetle>

1. Inspect 10 individual tillers in 10 different locations in the field.
2. At each location, record the total number of eggs and larvae found on each tiller. If the flag leaf is present, then record how many of the total were actually found on the flag leaf.
3. Determine the subtotal for each of the 10 locations to determine variation of infestation levels within the field.
4. Tally the subtotals for each category and record them in Table 2 (eggs/tiller and larvae/tiller for pre-boot) and Table 3 (eggs/flag leaf and larvae/flag leaf for boot+).
5. Divide each category total by 100 to determine the average number for each category and record in appropriate tables below.
6. Determine the percentage of eggs to larvae by dividing the total number of eggs per tiller by the total number of eggs + larvae per tiller, then multiplying by 100. This number indicates the percentage of eggs within the population found on a tiller. Repeat for percentage of larvae.
7. If the flag leaf is fully emerged, repeat step 6 (with flag leaf data) and record in Table 2. Also note the number of eggs and larvae on tillers.
8. Refer to threshold levels to determine if CLB control is needed. Note: If you discover a high percentage of eggs per tiller or flag leaf, delay any insecticide applications until at least 25% or more (preferably 50% or more) of the eggs have hatched and numbers still meet threshold requirements. (You will achieve better control when a majority of the population is in the larval stage.
9. Submit 25–50 CLB larvae to the OSU Insect ID Clinic to determine biological control parasitism rate. (Follow the instructions on submitting materials: <https://bpp.oregonstate.edu/how-submit-insect-and-spider-materials>)

Table 2. Pre-boot (vegetative growth stage) threshold calculations

	Total number per 100 tillers (Step 4)	Average number per tiller and percentage (Steps 5 and 6)	Meet or exceed (Yes or no)
Number of eggs =			
Number of larvae =			
Average eggs + larvae =			

Table 3. Boot+ (Flag leaf emerged and beyond or Feeks 9+) threshold calculations

	Total number per 100 tillers (Step 4)	Average number per tiller and percentage (Steps 5 and 6)	Meet or exceed (Yes or no)
Number of eggs =			
Number of larvae =			
Average eggs + larvae =			
% of eggs in population (Step 7) =			
% of larvae in population (Step 7) =			