PRIME

PRE-SEMESTER BULLETIN

July 2018 to June 2019

REGION VIII – Eastern Visayas Region

Table. Mean incidence of pest injuries, count of insect pests, and percentage of weed cover by month.

Region VIII

	2018					2019					
	JUL	AUG	SEP	OCT	DEC	JAN	FEB	MAR	APR	MAY	JUN
A. FOLIAR DISEASES											
Bacterial leaf blight	6.6	7.0	4.8	2.3	16.4	7.1	4.9	4.8	5.1	0	6.4
Bacterial leaf streak	0.2	1.8	1.0	0.0	0.0	0.2	0.1	0.6	0	0	0
Brown spot	2.9	2.0	4.5	0.9	0.5	0.5	0.6	1.9	3.6	0	1.4
Leaf blast	3.5	1.6	1.0	0.6	0.0	0.3	0.5	0.2	0.0	0	0.4
Red stripe	0.0	0.1	0.0	0.0	0.5	0.1	0.0	0.0	0	0	0.0
B. DISEASE OR PEST INJURY ON TILLERS											
Deadheart	1.6	1.5	0.8	4.6	0.0	0.4	1.4	1.5	0.1	0	2.8
Sheath Blight	0.8	1.0	3.5	6.2	0.0	0.3	1.0	4.0	3.5	0	0.9
C. DISEASE OR PEST INJURY ON PANICLES											
Neck Blast	1.2	2.7	0.5	0.3	0	0	0.3	0.3	0	0	0
Whitehead	0.1	6.6	1.5	5.8	0	0.3	1.0	5.0	6.4	0	0
D. SYSTEMIC DISEASE OR PEST INJURY											
Bugburn	0	0	0	0	0	0.0	0	0	0	0	0
Hopperburn	0	0	0	0	0	0.0	0.1	0	0	0	0
Tungro	0.5	1.4	0.3	0	0	0.1	0	0	0	0	0
E. INSECT COUNT											
Brown Plant Hopper	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0	0.1
Green Leaf Hopper	0.8	0.5	1.0	0.9	0.0	0.1	0.3	0.5	0.4	0	0.8
Rice Black Bug	0.0	0.0	0.1	0.1	0	0.0	0.1	0.0	0.0	0	0
Rice Bug	1.0	0.5	1.9	2.2	0.0	0.0	0.5	0.5	0.5	0	0
Rice Grain Bug	0.0	0.0	0.1	0.0	0	0.0	0.0	0.0	0.1	0	0
F. RODENT INJURY	0.2	0.3	0.1	0.1	0	0.2	0.5	0.2	0.2	0	0
G. WEED COVER	10.1	6.3	7.2	4.2	0.5	2.8	3.5	3.1	3.1	0	1.4

LEGEND 1-5 % 5 %

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Municipalities surveyed:	Biliran: Caibiran Eastern Samar: General Macarthur, Quinapondan, San Julian, and Sulat Leyte: Abuyog, Hilongos, Ormoc City, Santa Fe, and Tanauan Northern Samar: Mondragon, Rosario, and San Jose Samar: Santa Rita Southern Leyte: Hinunangan, Saint Bernard, and San Juan
Monitoring date:	July 2018 - June 2019
Number of monitored fields:	248
Data collectors:	Bonn Deluta, Dante Albarico, Elmer Elorza, Jaelynn Corbeta, Jefferson Bantiles, Jestoni Ligutan, Jestoni Palconit, Jig Panoy, Junalyn Timkang, Lorena Adrayan, Mario Socrates Tisado, Marlou Pan, Ma. Teresa Tagalog, Menchie Sosing, Michael Casillano, Nanette Lopez, Nenetta Panoy, Orlando Colico, Randy Dante, Raymart Pabuaya, Rex Socrates Altivo, Rosana Tictic, Sarah Jane Alano, and Shaina Naval

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Growth stages

In the second semester of 2018, most of the monitored fields were at the vegetative stage in July and the peak of harvest was in October (Figure 1). Crop establishment in most of the monitored fields may have occurred in November 2018 because majority of the fields were at vegetative stage in December 2018 to January 2019. Most of the fields in the first semester of 2019 were harvested in March to April. Fallow period was short because transplanting started in May to June 2019.

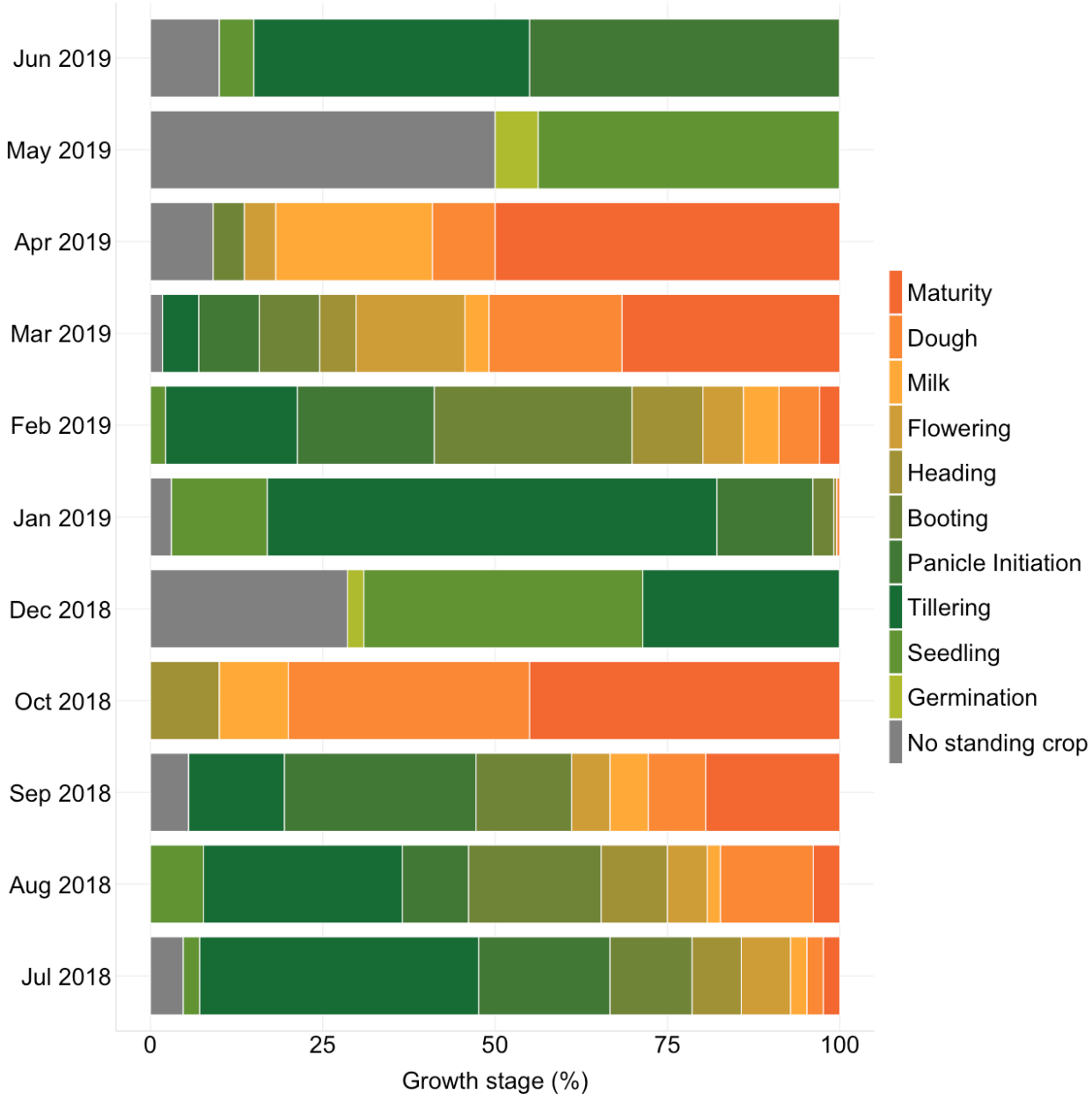

Figure 1. Proportion of crop growth stage of fields by month.

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Box plots, also known box-and-whisker plots, are presented to facilitate the visualization of the distribution or range of collected data (Figures 2 to 8). The black closed circle in or near each bar represents the mean of each pest injury. The black vertical line in each bar represents the median which refers to the midpoint of the range of data. Since it is not affected by extreme values or outliers like the mean, the median represents the most common value of a variable.

A. Foliar diseases

Bacterial leaf blight was observed in all months except in May 2019 (Figure 2). The highest mean incidence of bacterial blight was observed in December at 16%. The median incidence in this month was 0 which means that bacterial blight was not observed in most of the fields. The mean and median incidence of bacterial blight in June 2019 was 6% and 7%, respectively, when most of the standing crop in monitored fields was at tillering to panicle initiation stages. The highest mean incidence of brown spot (4%) was observed in September 2018, but the median was only 1%. The incidence of the bacterial leaf streak, leaf blast and red stripe was negligible.

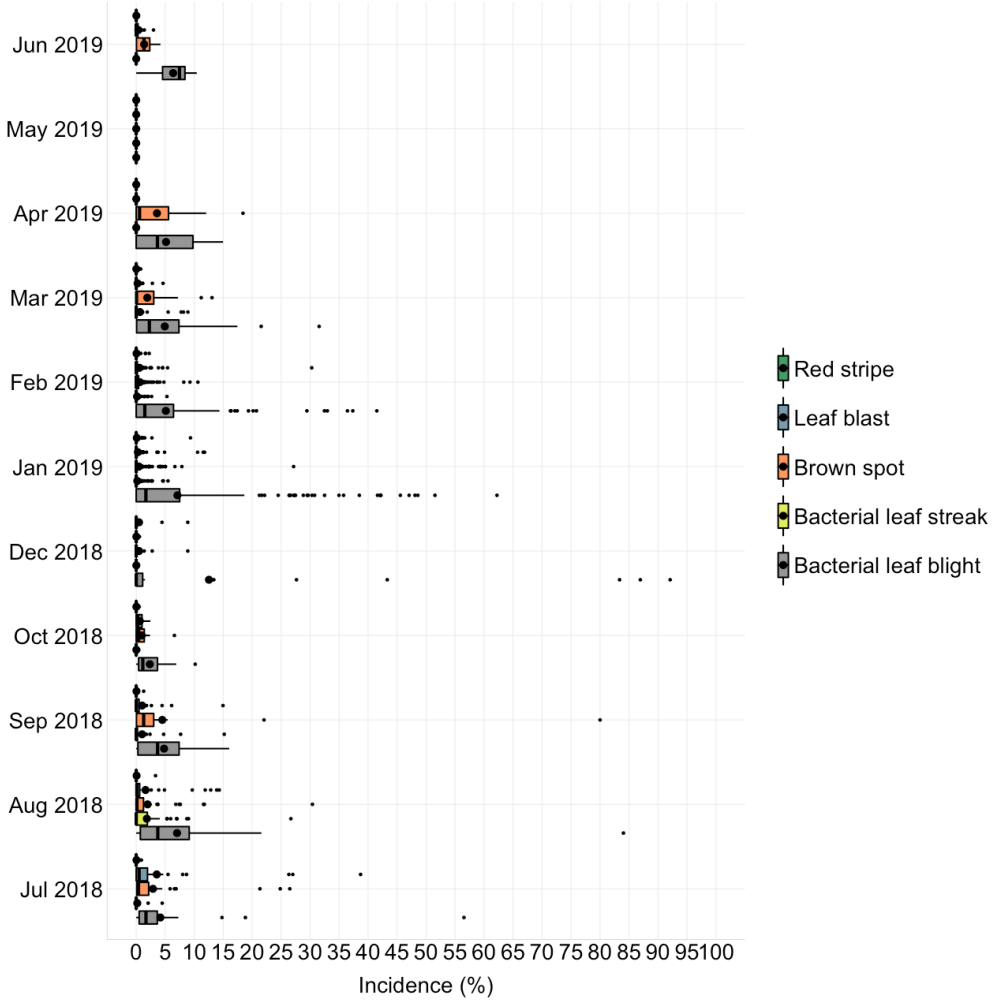

Figure 2. Incidence of foliar diseases in Region VIII, July 2018 to June 2019.

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B. Insect pest injuries and diseases on tillers

The highest incidence of deadheart and sheath blight was observed in September 2018. The mean and median incidence of deadheart was 5%, whereas the mean and median incidence of sheath blight was 6% and 3%. The incidence of both pest injuries was negligible in the other months

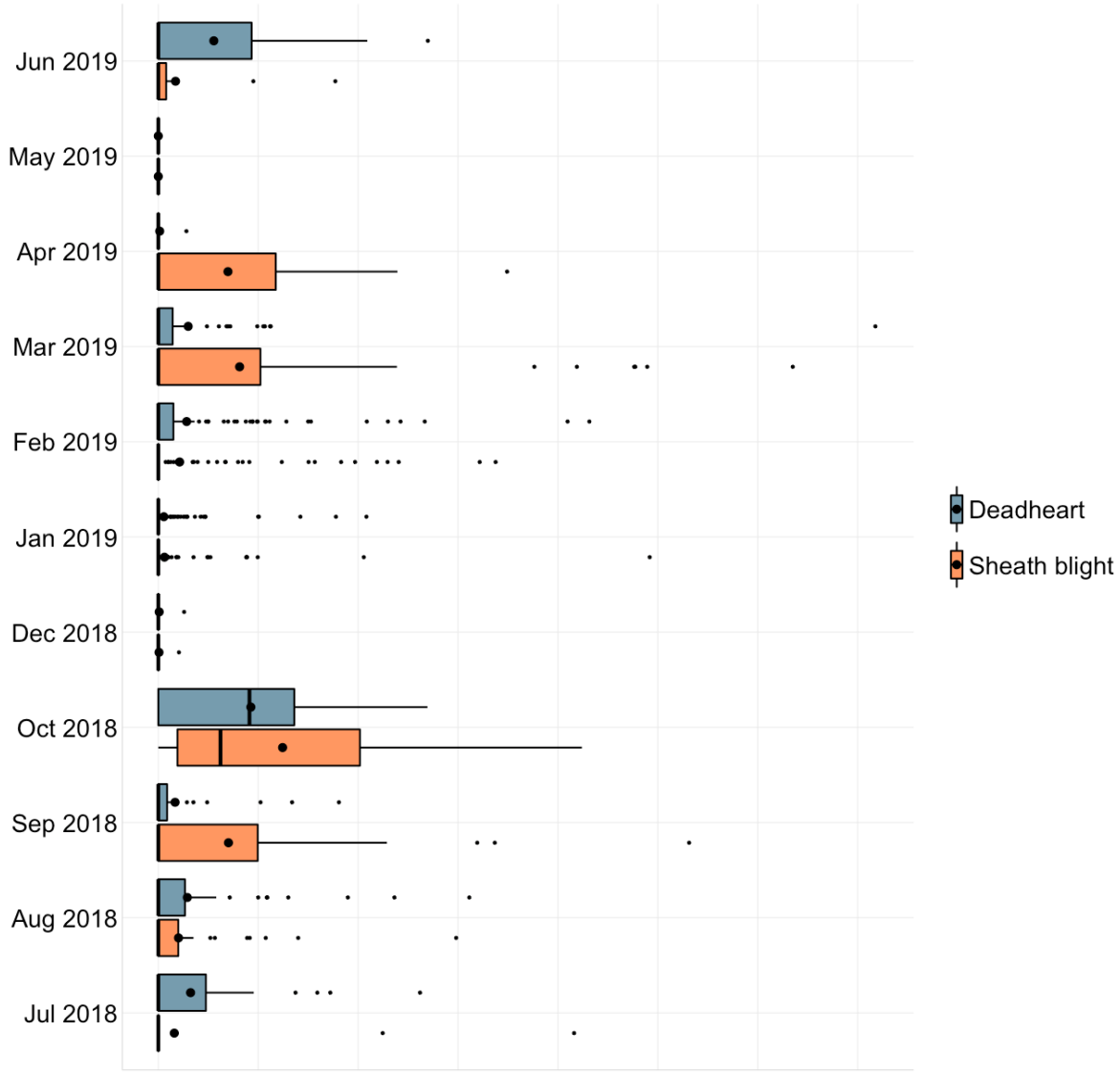

Figure 3. Incidence of deadheart and sheath blight in Region VIII, July 2018 to June 2019.

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C. Insect pest injuries and diseases on panicles

Data on neck blast and whitehead was collected in only 8 months. Neck blast incidence was negligible (Figure 4). The mean incidence of whitehead ranged from 5% to 7% in August and October 2018 and in March and April 2019. The highest median whitehead incidence of 5% was recorded in October 2018.

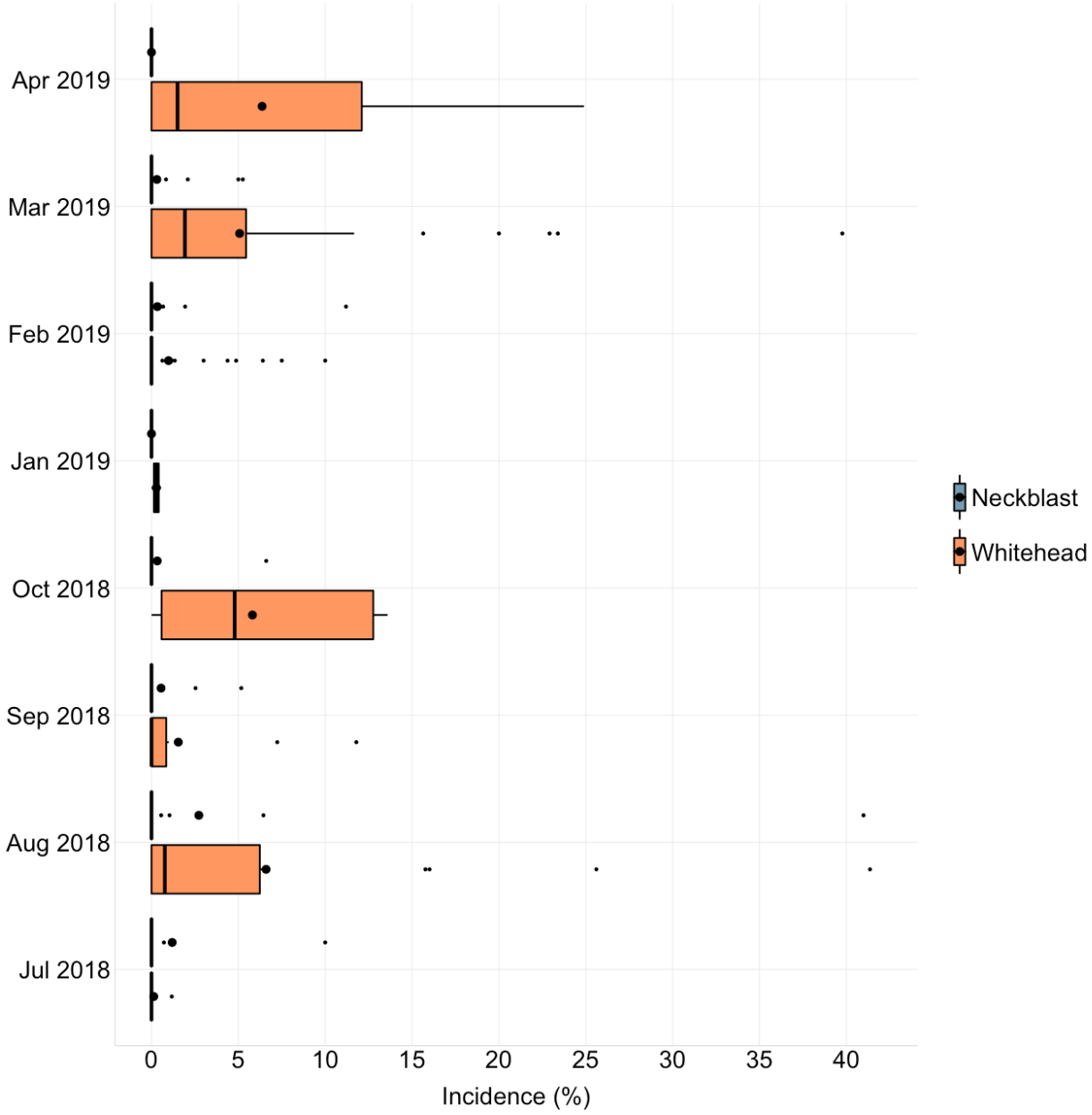

Figure 4. Incidence of neck blast and whitehead in Region VIII, July 2018 to June 2019.

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D. Systemic insect pest injuries and diseases

The incidence of bugburn, hopperburn and tungro during the year was negligible (Figure 5).

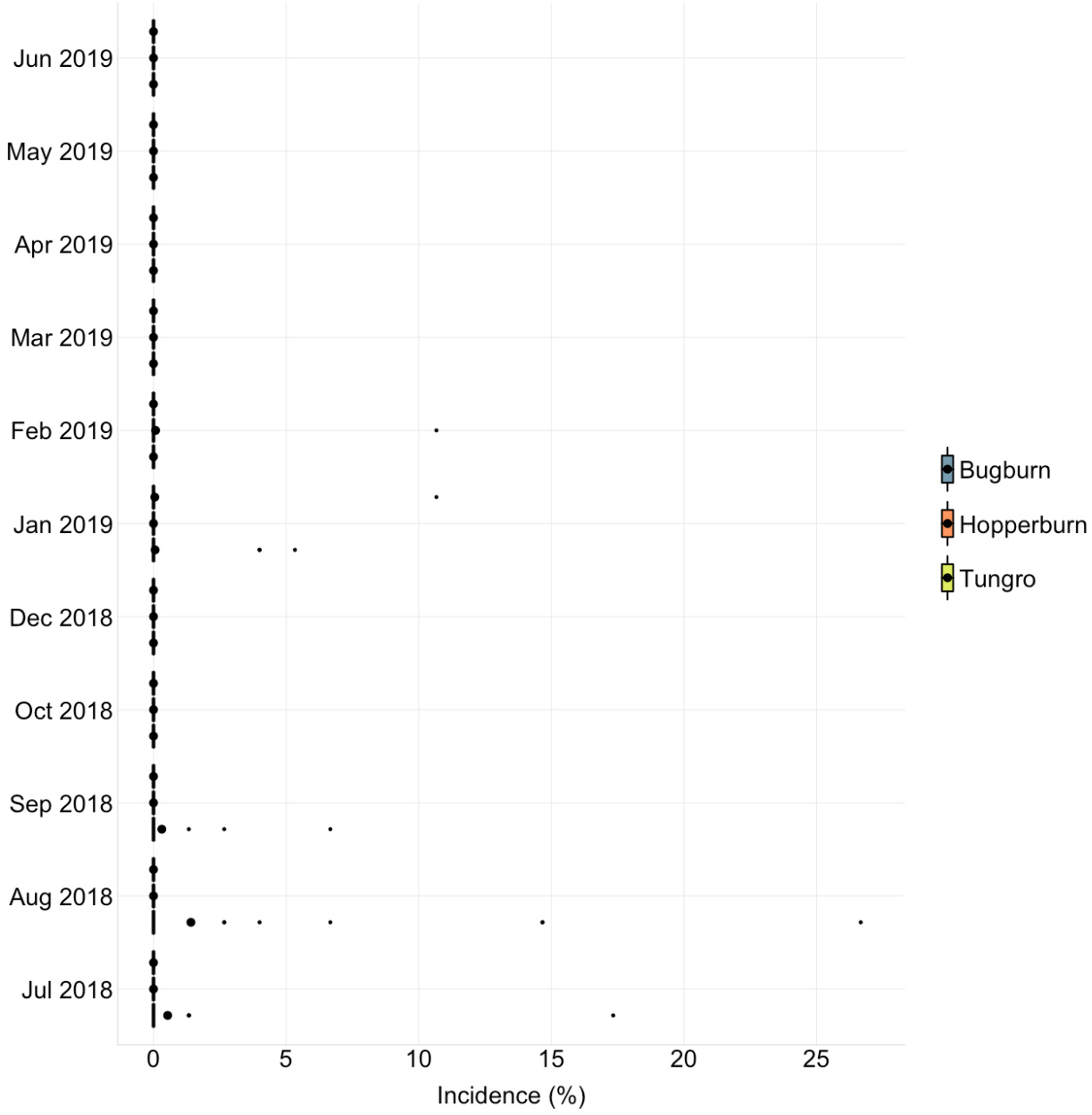

Figure 5. Incidence of bugburn, hopperburn and tungro in Region VIII, July 2018 to June 2019.

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E. Insect pests

The count of insect pests was generally negligible during the year (Figure 6). Rice bug was the most numerous insect pest observed during the year. Two insects per square meter were recorded in September and October 2018.

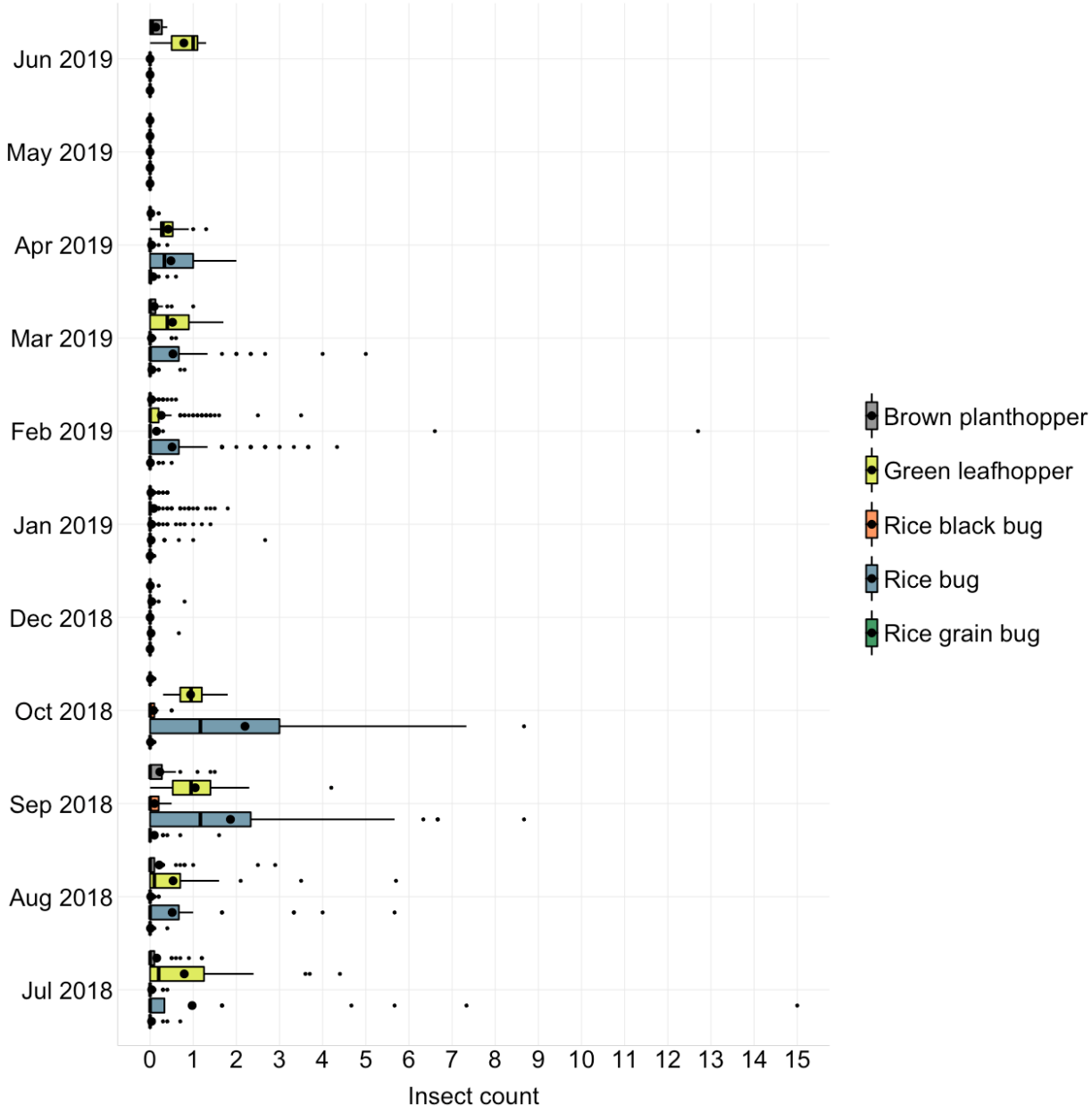

Figure 6. Count of insect pests in Region VIII, July 2018 to June 2019.

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F. Rat injury

The incidence of rat injury during the year was negligible (Figure 7).

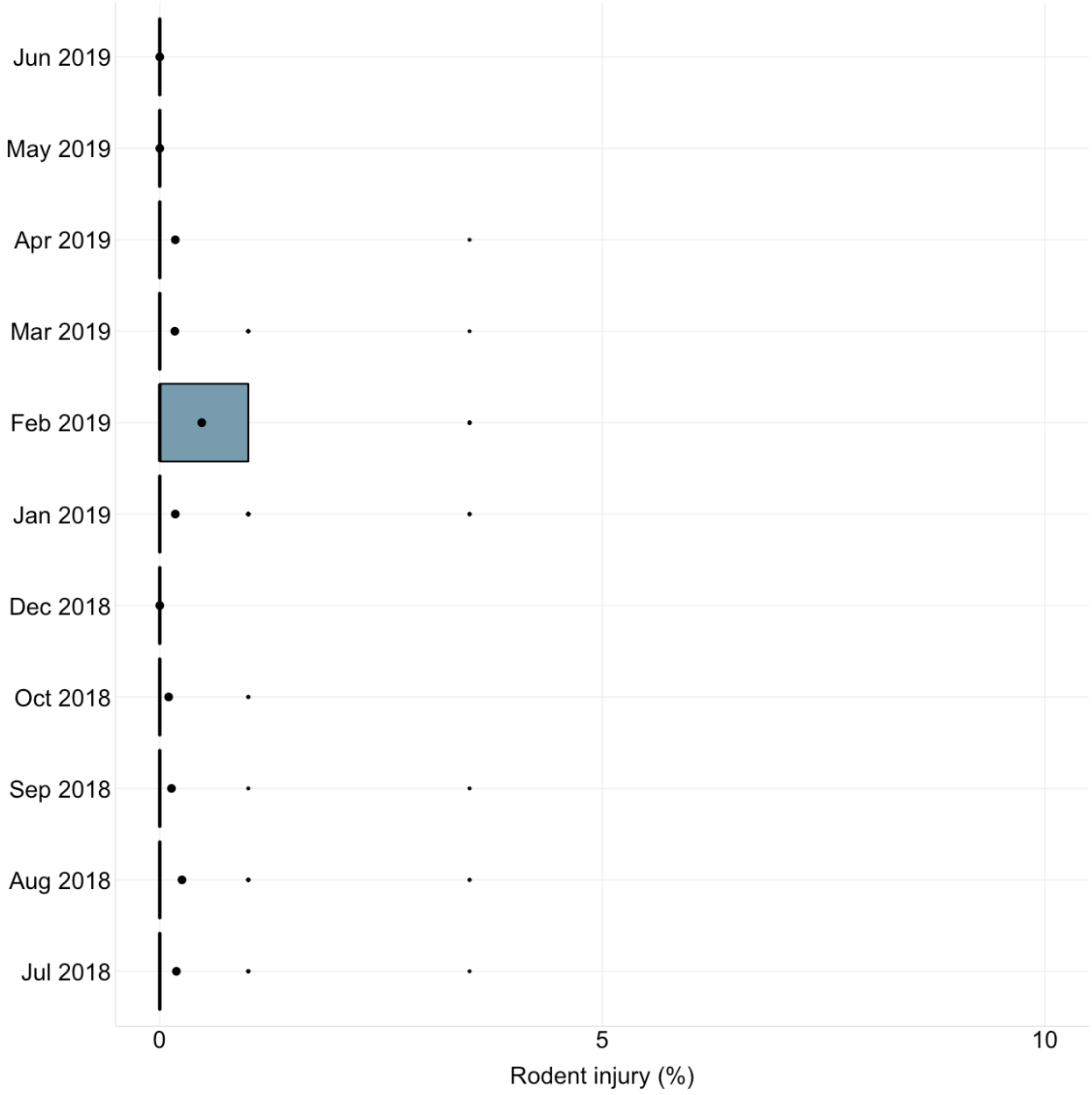

Figure 7. Incidence of rat injury in Region VIII, July 2018 to June 2019.

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G. Weed cover

The highest percentage of weed cover, ranging from to 6% to 10%, was observed in July to September 2018 (Figure 8). Weeds were not observed in most of the monitored fields (median incidence was 0), although the weed cover in some fields was as high as 80%.

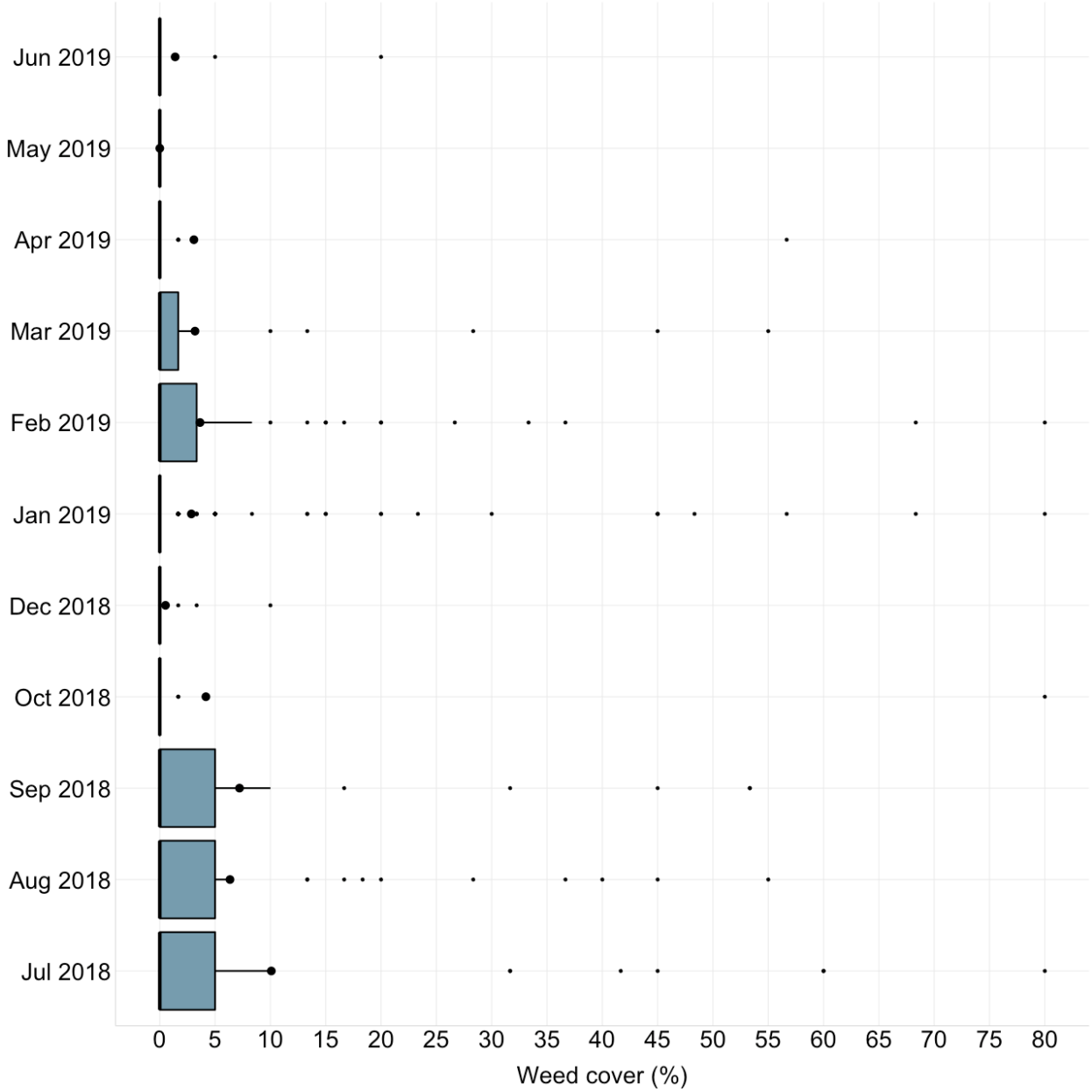

Figure 8. Percentage of weed cover in Region VIII, July 2018 to June 2019.

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Management of major pests

This section describes the management of the most important pests during the reporting period. A pest is operationally considered important if the mean incidence of injury (for insect pests and diseases) or percentage of cover (for weeds) in at least one month was at least 5%, or in the case of insect pests, the count was at least 5 per square meter.

Bacterial leaf blight

1. The most practical and economical approach to manage bacterial blight is to grow a resistant variety. Rotate varieties with different levels of resistance because a resistant variety may later become susceptible if grown continuously across several cropping seasons.
2. Use optimum seeding rate (80 kg per hectare) for direct-seeded rice and optimum plant spacing (e.g., 20cm x 20cm) for transplanted rice. A dense plant canopy reduces sunlight penetration, increases leaf wetness duration and lowers temperature in the plant canopy, creating a favorable microclimate for disease development.
3. Apply only the recommended amount of nitrogen. Aside from creating a dense plant canopy, excessive amount of nitrogen makes the plant tissues softer and facilitates the entry of the pathogen into the plant.
4. Manage the application of nutrient fertilizers. Apply the required amount of nitrogen in splits instead of applying all the required amount at the start of the cropping season.
5. Apply potassium and other required nutrients in addition to nitrogen. Potassium reduces the amount of most rice diseases.
6. Apply calcium silicate fertilizer or silicon fertilizer when feasible.
7. Remove weeds from the field because the pathogen can survive and cause disease on several weed species.
8. Use copper fungicides as last resort in controlling the disease. Copper fungicides should be applied with caution because copper accumulates in the soil surface (does not leach easily) and in the roots. Copper toxicity deforms roots and may eventually reduce yield.
9. Avoid using antibiotics because bacteria easily develop resistance to antibiotics. IRRI plant pathologists have observed that several strains of isolates collected from farmers' fields in the Philippines are resistant to antibiotics.
10. If plants had severe disease, cut the stubbles close to the ground and remove them from the field. A less laborious option is to immediately plow or rotavate the field after harvest to incorporate infected stubbles and crop residues in the soil. Avoid ratooning because the pathogen can survive on ratoon. Keep the field dry during the fallow period to control the pathogens in infected stubbles.

Sheath blight

1. There is currently no variety with reliable resistance to sheath blight. Varieties are either moderately or highly susceptible.
2. Use optimum seeding rate (e.g., 80 kg per hectare) for direct-seeded rice and optimum plant spacing (e.g., 20 cm x 20 cm) for transplanted rice. A dense plant canopy reduces sunlight penetration, increases leaf wetness duration and lowers temperature in the plant canopy, creating a favorable microclimate for disease development.
3. Apply only the recommended amount of nitrogen. Aside from creating a dense plant canopy, excessive amount of nitrogen makes the plant tissues softer and facilitates the entry of the pathogen into the plant.
4. Manage the application of nutrient fertilizers. Apply the required amount of nitrogen in splits instead of applying all the required amount at the start of the cropping season.

5. Apply potassium and other required nutrients in addition to nitrogen. Potassium reduces the amount of most rice diseases.
6. Apply calcium silicate fertilizer or silicon fertilizer when feasible.
7. Apply *Trichoderma* spp. to control sheath blight. The application of *Trichoderma* may also increase plant vigor. Purchase a product that has been formulated and maintained according to strict quality control measures. Follow the directions on how to use and store the product as recommended by the manufacturer to maintain its viability.
8. Keep the field, including levees, free from weeds because the pathogen can infect most of the weed species in rice fields.
9. Use fungicides as last resort in controlling the disease. If necessary, apply fungicides, such as azoxystrobin (alone or in combination propiconazole), ready mixture of trifloxystrobin and propiconazole, and ready mixture of pyraclostrobin and flutolanil, at 7 days after panicle differentiation to heading. Fungicide application after heading may not be necessary because infection after grain filling, which begins within one to five days after heading and is completed within three weeks, does not usually affect yield.
10. Avoid repetitive use of a single active ingredient and mix or alternate an active ingredient with an appropriate partner. Integrate the use of chemical pesticides with cultural practices or non-chemical methods. Wherever feasible, several strategies should be used together.
11. If plants had severe disease, cut the stubbles close to the ground and remove them from the field. A less laborious option is to immediately plow or rotavate the field after harvest to incorporate infected stubbles and crop residues in the soil. Avoid ratooning because the pathogen can survive on ratoon.
12. Keep the field dry during fallow period. Drying may reduce the survival of the pathogen but may not completely control the disease because the pathogen can survive on dead plant tissues.

Whitehead caused by stemborer

1. Monitor the peak of yellow stem borer population in the area. This can be done using light traps. Do not transplant or sow seeds when insect population is high.
2. Consider the use of pheromones to control stemborers.
3. The most practical and economical approach to manage whitehead is to grow a resistant variety. Rotate varieties with different levels of resistance because a resistant variety may later become susceptible if grown continuously across several cropping seasons.
4. Practice planting synchrony with defined fallow period in your area. Asynchronous planting results in overlapping generations of stemborer throughout the year. If this is not possible, a farmer who intends to grow a susceptible variety should not establish his crop later than most farmers' fields.
5. Raise level of irrigation water periodically to submerge the eggs on the lower parts of the plant.
6. Remove egg masses manually in the nursery and field.
7. Manage the application of nutrient fertilizers. Apply the required amount of nitrogen in splits instead of applying all the required amount at the start of the cropping season. Nitrogen makes the plant tissues softer and facilitates penetration of stemborer larvae.
8. Remove alternate hosts during the cropping season and fallow period.
9. If high infestation occurred, cut stubbles close to the ground and dry or remove stubbles from the field. A less laborious option is to plow the field during fallow to bury stubbles.

10. Do not apply insecticides during the early vegetative stage. Systemic insecticides may be applied after the vegetative stage. Systemic insecticides were found to be more effective than contact insecticides because the larvae and pupae stay inside the stem. Insecticides should be used with extreme caution. Monitor the population of stemborers and intensity of deadheart or whitehead prior to the application of insecticides because its efficacy is low when generations of stemborer overlap and when damage is already severe. Apply the insecticide according to the instructions in the product label including the pre-harvest interval (wait time between a pesticide application and when a crop can be harvested). Insecticides should be used as the last resort and should be integrated with other methods to conserve natural enemies.

Weeds

1. Plow and harrow the field several times before crop establishment. If feasible, start land preparation 3−4 weeks before planting.
2. If weedy rice is a problem, apply glyphosate before land preparation or seeding. The application of pretilachlor with fenchlorim during final land preparation or levelling has also been reported to reduce weedy rice.
3. Practice stale seedbed technique. According to the IRRI Knowledge Bank (http://www.knowledgebank.irri.org/step-by-step-production/growth/weed-management/stale-seedbed-technique), this technique is done as follows:
    a. Perform tillage operations. Plow, harrow, and level the field.
    b. Stimulate weed emergence by light irrigation.
    c. Irrigate the field at least two weeks before sowing.
    d. Maintain enough soil moisture to allow weeds to germinate.
    e. Kill the emerged seedlings using non-selective herbicides (e.g., glyphosate) or light cultivation.
    f. If the soil condition is suitable for sowing, broadcast seeds without further tillage operations. Tillage could bring more weed seeds near the soil surface, thus promoting weed germination.
4. Level the field to ensure a constant water level. Avoid high spots where weeds can grow.
5. Apply pre-emergence herbicide (e.g., pretilachlor + fenclorim) 2−3 days after sowing. Follow recommended amount and timing of product and water condition in the field as indicated in the label. Do not use the same herbicide over long periods to prevent herbicide resistance.
6. If grass weeds are the main weed problem, apply early post-emergence herbicide.
7. Maintain a 2-5 cm water level in the field to minimize weed emergence. If water is sufficient, flood the fields until closure of the plant canopy.
8. Apply nitrogen fertilizer just after weeding to minimize rice-weed competition for nitrogen.
9. If feasibile, consider the use of biological control agents to suppress growth or reduce population of weeds.
10. If feasible, plow the field during fallow to kill weeds and prevent the build-up of weed seeds in the soil.

Annexes

Region VIII

July 2018	n	min	max	Pest incidence (%) 0	<1	1-5	>5
A. FOLIAR DISEASES							
Bacterial leaf blight	40	0.00	100.18				
Bacterial leaf streak	40	0.00	4.48				
Brown spot	40	0.00	26.49				
Leaf blast	40	0.00	38.69				
Red stripe	40	0.00	0.89				
B. DISEASE OR PEST INJURY ON TILLERS							
Deadheart	40	0.00	13.10				
Sheath Blight	40	0.00	20.81				
C. DISEASE OR PEST INJURY ON PANICLES							
Neck Blast	9	0.00	10.00				
Whitehead	9	0.00	1.17				
D. SYSTEMIC DISEASE OR PEST INJURY							
Bugburn	40	0.00	0.00				
Hopperburn	40	0.00	0.00				
Tungro	40	0.00	17.33				
E. INSECT COUNT							
Brown Plant Hopper	40	0.00	1.20				
Green Leaf Hopper	40	0.00	4.40				
Rice Black Bug	40	0.00	0.40				
Rice Bug	40	0.00	15.00				
Rice Grain Bug	40	0.00	0.70				
F. RODENT INJURY	40	0.00	3.50				
G. WEED COVER	40	0.00	80.00				

Annex Figure 1. Incidence of pest injuries, count of insect pests, and weed cover in July 2018. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count, or weed cover.

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Region VIII

August 2018	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	52	0.00	84.03	
Bacterial leaf streak	52	0.00	26.68	
Brown spot	52	0.00	30.39	
Leaf blast	52	0.00	14.32	
Red stripe	52	0.00	3.33	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	52	0.00	15.56	
Sheath Blight	52	0.00	14.91	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	18	0.00	40.99	
Whitehead	18	0.00	41.36	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	52	0.00	0.00	
Hopperburn	52	0.00	0.00	
Tungro	52	0.00	26.67	
E. INSECT COUNT				
Brown Plant Hopper	52	0.00	2.90	
Green Leaf Hopper	52	0.00	5.70	
Rice Black Bug	52	0.00	0.20	
Rice Bug	52	0.00	5.67	
Rice Grain Bug	52	0.00	0.40	
F. RODENT INJURY	52	0.00	3.50	
G. WEED COVER	52	0.00	55.00	

Annex Figure 2. Incidence of diseases, count of insect pests, and weed cover in August 2018. Horizontal bar shows the proportion of fields in each range of pest injury incidence or insect count.

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Region VIII

September 2018	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	34	0.00	16.04	
Bacterial leaf streak	34	0.00	15.18	
Brown spot	34	0.00	80.00	
Leaf blast	34	0.00	14.96	
Red stripe	34	0.00	1.29	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	34	0.00	9.04	
Sheath Blight	34	0.00	26.56	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	14	0.00	5.17	
Whitehead	14	0.00	11.79	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	34	0.00	0.00	
Hopperburn	34	0.00	0.00	
Tungro	34	0.00	6.67	
E. INSECT COUNT				
Brown Plant Hopper	34	0.00	1.50	
Green Leaf Hopper	34	0.00	4.20	
Rice Black Bug	34	0.00	0.50	
Rice Bug	34	0.00	8.67	
Rice Grain Bug	34	0.00	1.60	
F. RODENT INJURY	34	0.00	3.50	
G. WEED COVER	34	0.00	53.33	
				10 20 30 40 50 60 70 80 90 100

Annex Figure 3. Incidence of pest injuries, count of insect pests, and weed cover in September 2018. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count, or weed cover.

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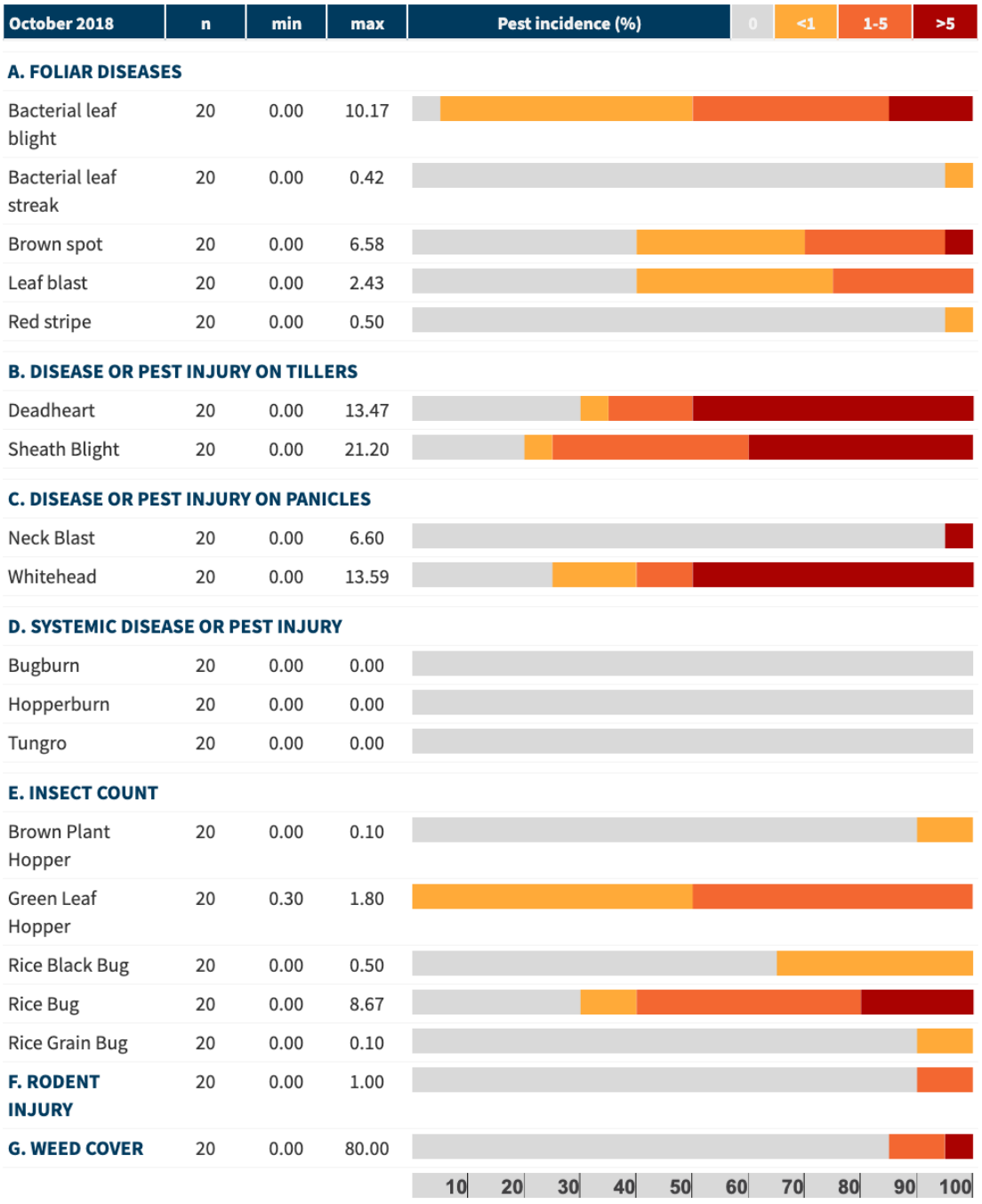
Region VIII



Annex Figure 4. Incidence of pest injuries, count of insect pests, and weed cover in October 2018. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

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Region VIII

December 2018	n	min	max	Pest incidence (%) 0	<1	1-5	>5
A. FOLIAR DISEASES							
Bacterial leaf blight	29	0.00	123.17				
Bacterial leaf streak	29	0.00	0.37				
Brown spot	29	0.00	8.89				
Leaf blast	29	0.00	0.56				
Red stripe	29	0.00	8.89				
B. DISEASE OR PEST INJURY ON TILLERS							
Deadheart	29	0.00	1.29				
Sheath Blight	29	0.00	1.03				
C. DISEASE OR PEST INJURY ON PANICLES							
Neck Blast	0	0	0				
Whitehead	0	0	0				
D. SYSTEMIC DISEASE OR PEST INJURY							
Bugburn	29	0.00	0.00				
Hopperburn	29	0.00	0.00				
Tungro	29	0.00	0.00				
E. INSECT COUNT							
Brown Plant Hopper	29	0.00	0.20				
Green Leaf Hopper	29	0.00	0.80				
Rice Black Bug	29	0.00	0.00				
Rice Bug	29	0.00	0.67				
Rice Grain Bug	29	0.00	0.00				
F. RODENT INJURY	29	0.00	0.00				
G. WEED COVER	29	0.00	10.00				

Annex Figure 5. Incidence of pest injuries, count of insect pests, and weed cover in December 2018. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

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Region VIII

January 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	225	0.00	62.22	
Bacterial leaf streak	225	0.00	5.48	
Brown spot	225	0.00	27.14	
Leaf blast	225	0.00	11.79	
Red stripe	225	0.00	9.36	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	225	0.00	17.47	
Sheath Blight	225	0.00	24.59	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	2	0.00	0.00	
Whitehead	2	0.00	0.56	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	225	0.00	10.67	
Hopperburn	225	0.00	10.67	
Tungro	225	0.00	5.33	
E. INSECT COUNT				
Brown Plant Hopper	225	0.00	0.40	
Green Leaf Hopper	225	0.00	2.20	
Rice Black Bug	225	0.00	1.40	
Rice Bug	225	0.00	2.67	
Rice Grain Bug	225	0.00	0.10	
F. RODENT INJURY	225	0.00	3.50	
G. WEED COVER	225	0.00	80.00	

Annex Figure 6. Incidence of pest injuries, count of insect pests, and weed cover in January 2019. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Region VIII

February 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	141	0.00	41.50	
Bacterial leaf streak	141	0.00	5.30	
Brown spot	141	0.00	10.63	
Leaf blast	141	0.00	30.27	
Red stripe	141	0.00	2.24	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	141	0.00	21.57	
Sheath Blight	141	0.00	16.88	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	42	0.00	11.20	
Whitehead	42	0.00	10.00	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	141	0.00	0.00	
Hopperburn	141	0.00	10.67	
Tungro	141	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	141	0.00	0.60	
Green Leaf Hopper	141	0.00	3.50	
Rice Black Bug	141	0.00	12.70	
Rice Bug	141	0.00	4.33	
Rice Grain Bug	141	0.00	0.50	
F. RODENT INJURY	141	0.00	3.50	
G. WEED COVER	141	0.00	80.00	

Annex Figure 7. Incidence of pest injuries, count of insect pests, and weed cover in February 2019. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Region VIII

March 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	57	0.00	31.55	
Bacterial leaf streak	57	0.00	8.91	
Brown spot	57	0.00	13.06	
Leaf blast	57	0.00	4.63	
Red stripe	57	0.00	0.77	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	57	0.00	35.88	
Sheath Blight	57	0.00	31.75	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	44	0.00	5.26	
Whitehead	44	0.00	39.77	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	57	0.00	0.00	
Hopperburn	57	0.00	0.00	
Tungro	57	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	57	0.00	1.00	
Green Leaf Hopper	57	0.00	1.70	
Rice Black Bug	57	0.00	0.60	
Rice Bug	57	0.00	5.00	
Rice Grain Bug	57	0.00	0.80	
F. RODENT INJURY	57	0.00	3.50	
G. WEED COVER	57	0.00	55.00	

Annex Figure 8. Incidence of pest injuries, count of insect pests, and weed cover in March 2019. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Region VIII

April 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	20	0.00	14.98	
Bacterial leaf streak	20	0.00	0.00	
Brown spot	20	0.00	18.41	
Leaf blast	20	0.00	0.02	
Red stripe	20	0.00	0.00	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	20	0.00	1.41	
Sheath Blight	20	0.00	17.46	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	19	0.00	0.00	
Whitehead	19	0.00	24.90	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	20	0.00	0.00	
Hopperburn	20	0.00	0.00	
Tungro	20	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	20	0.00	0.20	
Green Leaf Hopper	20	0.00	1.30	
Rice Black Bug	20	0.00	0.40	
Rice Bug	20	0.00	2.00	
Rice Grain Bug	20	0.00	0.60	
F. RODENT INJURY	20	0.00	3.50	
G. WEED COVER	20	0.00	56.67	

Annex Figure 9. Incidence of pest injuries, count of insect pests, and weed cover in April 2019. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Region VIII

May 2019	n	min	max	Pest incidence (%)	0	<1	1-5	>5
A. FOLIAR DISEASES								
Bacterial leaf blight	7	0.00	0.00					
Bacterial leaf streak	7	0.00	0.00					
Brown spot	7	0.00	0.00					
Leaf blast	7	0.00	0.00					
Red stripe	7	0.00	0.00					
B. DISEASE OR PEST INJURY ON TILLERS								
Deadheart	7	0.00	0.00					
Sheath Blight	7	0.00	0.00					
C. DISEASE OR PEST INJURY ON PANICLES								
Neck Blast	0	0	0					
Whitehead	0	0	0					
D. SYSTEMIC DISEASE OR PEST INJURY								
Bugburn	7	0.00	0.00					
Hopperburn	7	0.00	0.00					
Tungro	7	0.00	0.00					
E. INSECT COUNT								
Brown Plant Hopper	7	0.00	0.00					
Green Leaf Hopper	7	0.00	0.00					
Rice Black Bug	7	0.00	0.00					
Rice Bug	7	0.00	0.00					
Rice Grain Bug	7	0.00	0.00					
F. RODENT INJURY	7	0.00	0.00					
G. WEED COVER	7	0.00	0.00					
				10 20 30 40 50 60 70 80 90 100				

Annex Figure 10. Incidence of pest injuries, count of insect pests, and weed cover in May 2019. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

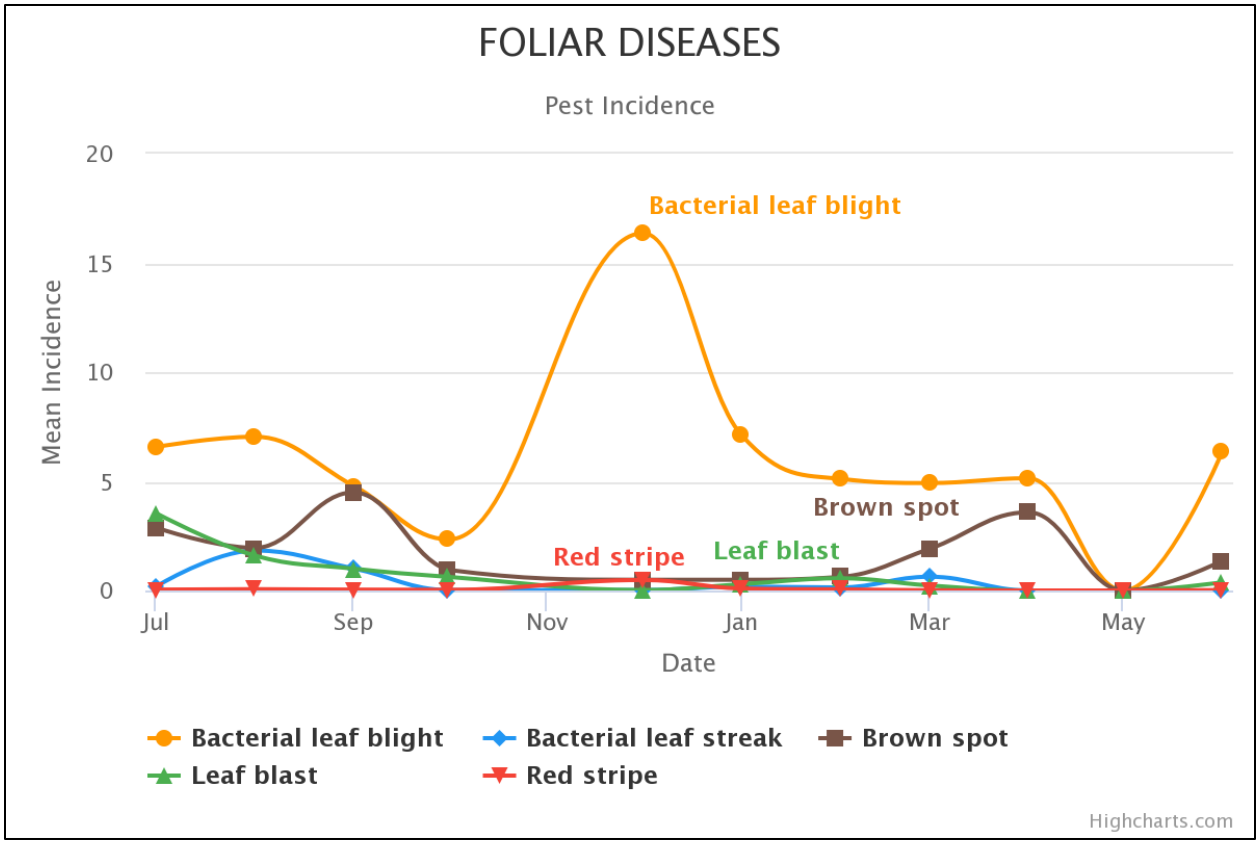
Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Region VIII

June 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	18	0.00	10.44	
Bacterial leaf streak	18	0.00	0.00	
Brown spot	18	0.00	4.18	
Leaf blast	18	0.00	2.98	
Red stripe	18	0.00	0.29	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	18	0.00	13.49	
Sheath Blight	18	0.00	8.86	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	0	0	0	
Whitehead	0	0	0	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	18	0.00	0.00	
Hopperburn	18	0.00	0.00	
Tungro	18	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	18	0.00	0.40	
Green Leaf Hopper	18	0.00	1.30	
Rice Black Bug	18	0.00	0.00	
Rice Bug	18	0.00	0.00	
Rice Grain Bug	18	0.00	0.00	
F. RODENT INJURY	18	0.00	0.00	
G. WEED COVER	18	0.00	20.00	

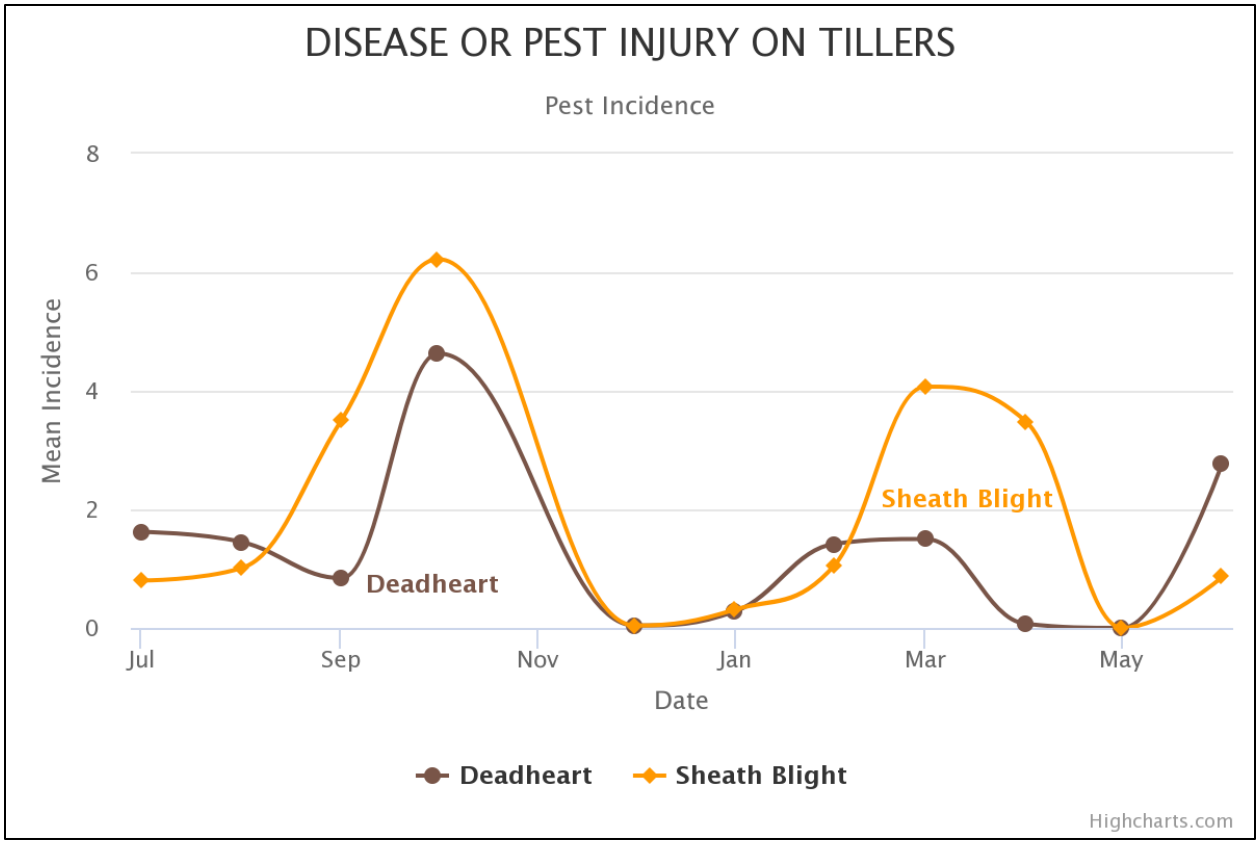
Annex Figure 11. Incidence of pest injuries, count of insect pests, and weed cover in June 2019. Horizontal bar shows the proportion of fields in each range of pest injury incidence, insect count or weed cover.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.



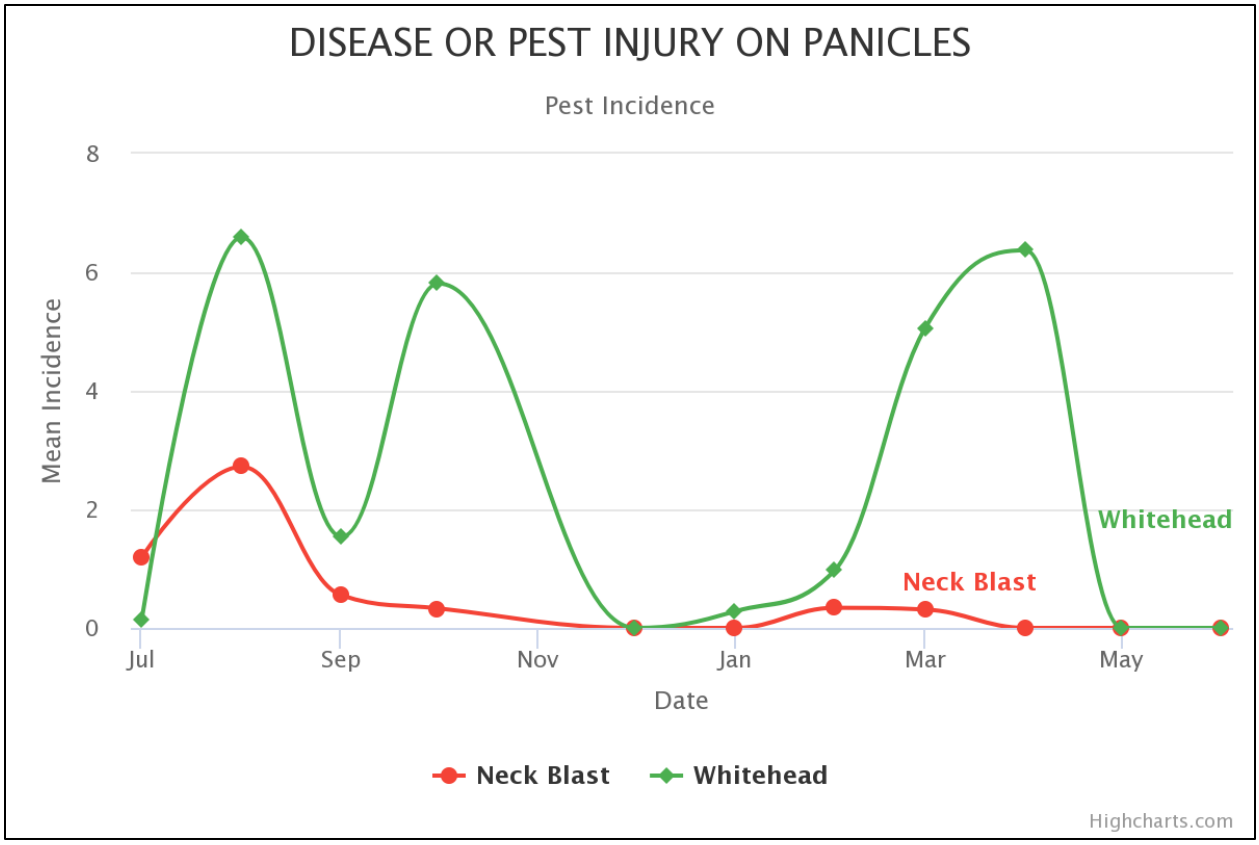
Annex Figure 12. Mean incidence of foliar diseases in Region VIII, July 2018 to June 2019.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.



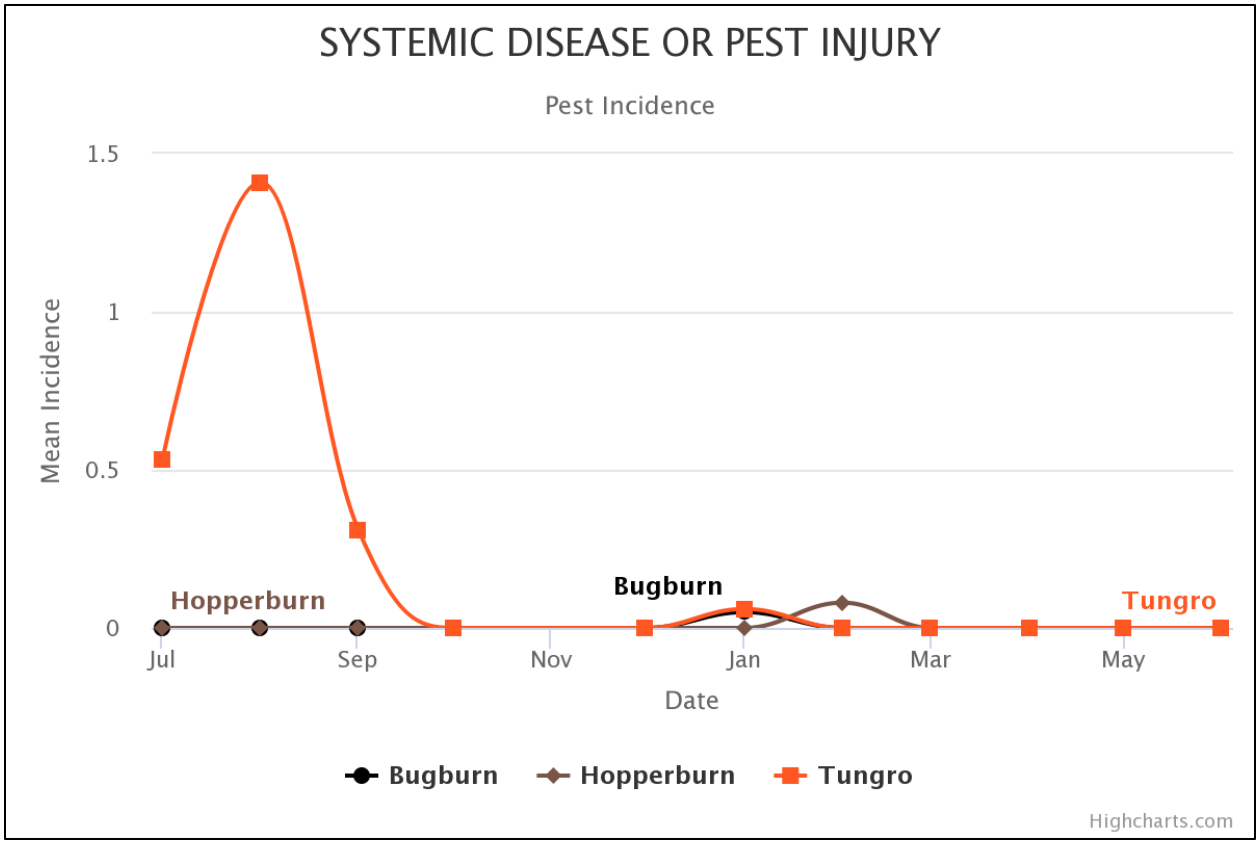
Annex Figure 13. Mean Incidence of deadheart and sheath blight in Region VIII, July 2018 to June 2019.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.



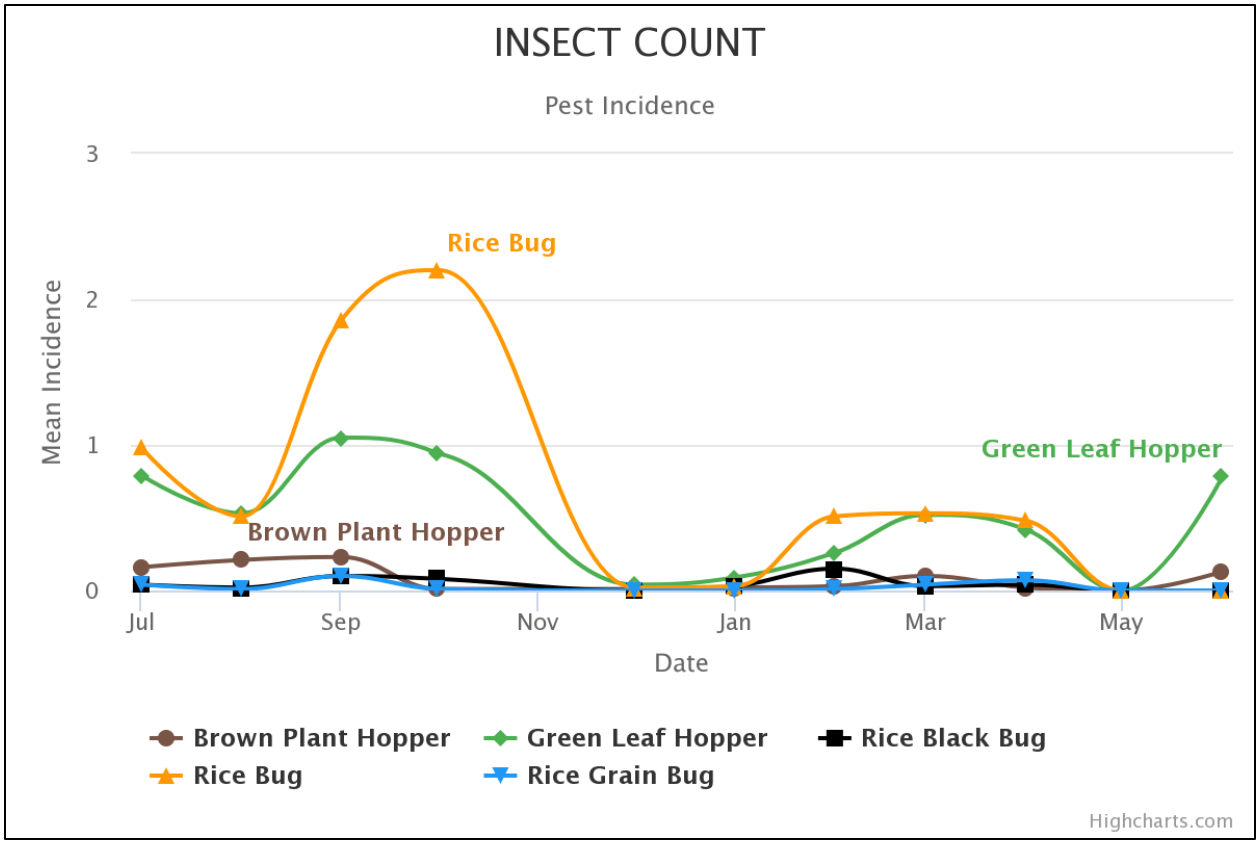
Annex Figure 14. Mean incidence of neck blast and whitehead in Region VIII, July 2018 to June 2019.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.



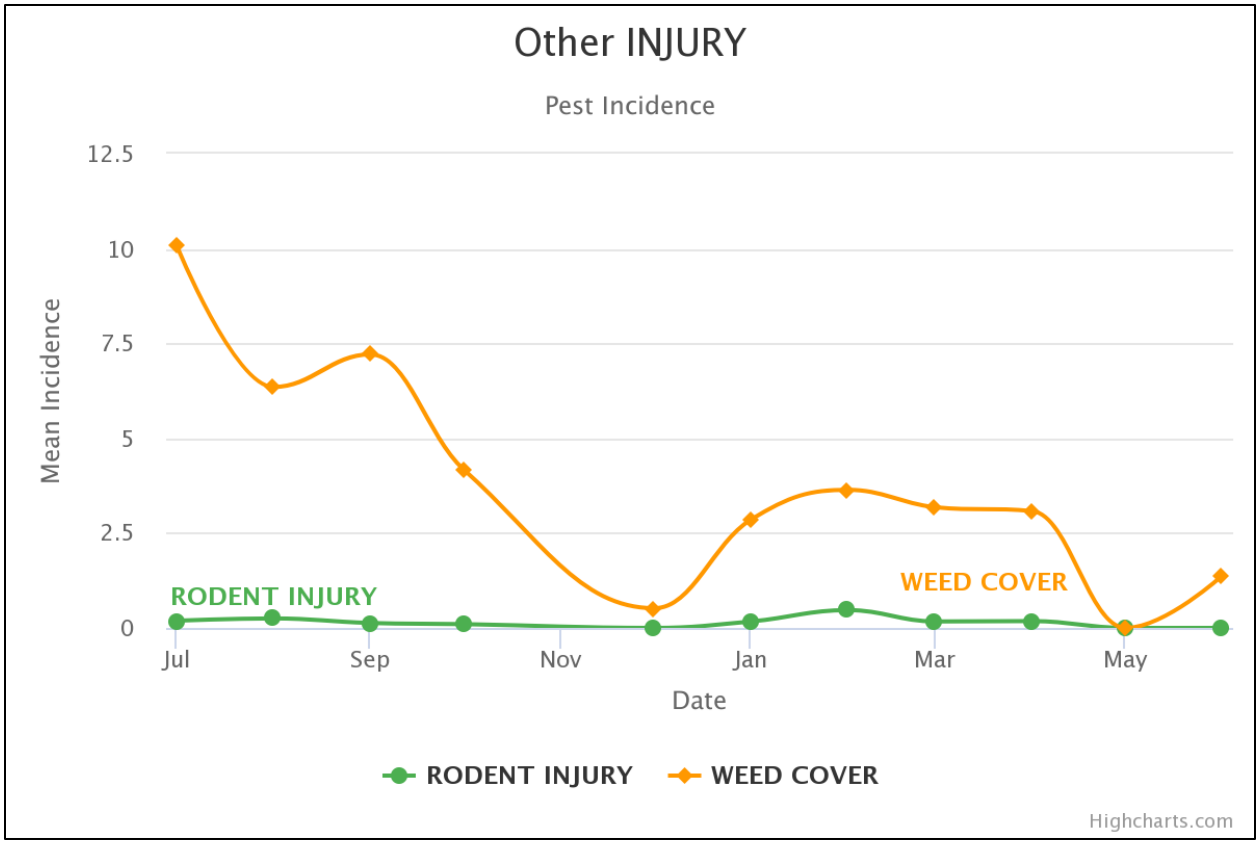
Annex Figure 15. Mean incidence of bugburn, hopperburn and tungro in Region VIII, July 2018 to June 2019.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.



Annex Figure 16. Mean count of insect pests in Region VIII, July 2018 to June 2019.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.



Annex Figure 17. Mean incidence of rat injury and weed infestation in Region VIII, July 2018 to June 2019.

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.