PRE-SEMESTER BULLETIN

June 2020

REGION XI - DAVAO REGION

AT A GLANCE

Table 1. Mean incidence of pest injuries, count of insect pests, and percentage of weed cover by month from July to December 2019.

Region XI	2019					
	JUL	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
A. FOLIAR DISEASES						
Bacterial leaf blight	1.4	2.8	3.1	3.6	0.6	0.0
Bacterial leaf streak	0.1	0.1	0.4	0.2	0.1	0.0
Brown spot	0.3	0.9	0.7	1.3	1.0	0.0
Leaf blast	0.1	0.4	0.2	0.1	0.0	0.1
Red stripe	0.0	0.0	0.0	0.0	0.0	0.0
B. DISEASE OR PEST INJURY ON TILLERS						
Deadheart	1.0	2.8	1.0	2.8	2.5	0.0
Sheath Blight	0.2	0.1	0.7	1.7	1.4	0.0
C. DISEASE OR PEST INJURY ON PANICLES						
Neck Blast	0.0	0.3	0.1	1.9	1.0	0.0
Whitehead	0.0	2.2	1.7	4.5	11.2	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	0.0	0.0
Tungro	0.0	0.1	0.2	0.2	1.6	0.0
E. INSECT COUNT						
Brown Planthopper	0.1	0.6	0.1	0.0	0.0	0.0
Green Leafhopper	0.1	0.4	0.1	0.0	0.0	0.1
Rice Black Bug	0.0	0.1	0.4	0.0	0.1	0.0
Rice Bug	0.1	0.1	0.1	0.6	2.3	0.0
Rice Grain Bug	0.0	0.0	0.0	0.0	0.0	0.0
F. RODENT INJURY	0.0	0.1	0.0	0.1	0.1	0.0
G. WEED COVER	0.8	5.2	4.2	7.0	0.5	0.0

Mean of all monitoring fields.

LEGEND		
1-5 % or 1-5 insects		>5 % or 5 insects

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

Table 2. Mean incidence of pest injuries, count of insect pests, and percentage of weed cover by month from July to December 2018.

Region XI	2018					
	JUL	AUG	SEP	OCT	NOV	DEC
A. FOLIAR DISEASES						
Bacterial leaf blight	0.4	1.3	2.2	2.3	13.8	0.0
Bacterial leaf streak	0.6	0.5	1.4	2.8	0.0	0.0
Brown spot	0.3	0.6	0.6	1.6	10.3	0.0
Leaf blast	0.1	0.2	0.1	0.4	0.2	0.0
Red stripe	0.1	0.0	0.0	0.6	0.0	0.0
B. DISEASE OR PEST INJURY ON TILLERS						
Deadheart	0.9	0.9	2.4	1.4	0.0	0.0
Sheath Blight	1.9	0.2	1.1	1.8	0.0	0.2
C. DISEASE OR PEST INJURY ON PANICLES						
Neck Blast	0.0	0.2	1.2	2.5	17.3	0.0
Whitehead	0.0	0.2	6.4	4.4	6.4	0.0
D. SYSTEMIC DISEASE OR PEST INJURY						
Bugburn	0.0	0.0	0.0	0.0	0.0	1.6
Hopperburn	0.0	0.0	0.0	0.0	0.0	0.0
Tungro	0.0	0.1	0.5	0.0	0.0	0.0
E. INSECT COUNT						
Brown Planthopper	0.1	3.4	0.1	0.1	0.0	0.0
Green Leafhopper	0.0	0.4	0.3	0.1	0.0	0.0
Rice Black Bug	0.0	0.0	0.2	0.1	0.0	0.1
Rice Bug	0.1	0.2	0.3	1.8	6.0	0.0
Rice Grain Bug	0.0	0.0	0.0	0.0	0.0	0.0
F. RODENT INJURY	0.0	0.1	0.1	0.1	0.0	0.0
G. WEED COVER	1.0	3.6	4.3	6.8	26.7	0.0

Mean of all monitoring fields.

LEGEND		
1-5 % or 1-5 insects		>5 % or 5 insects

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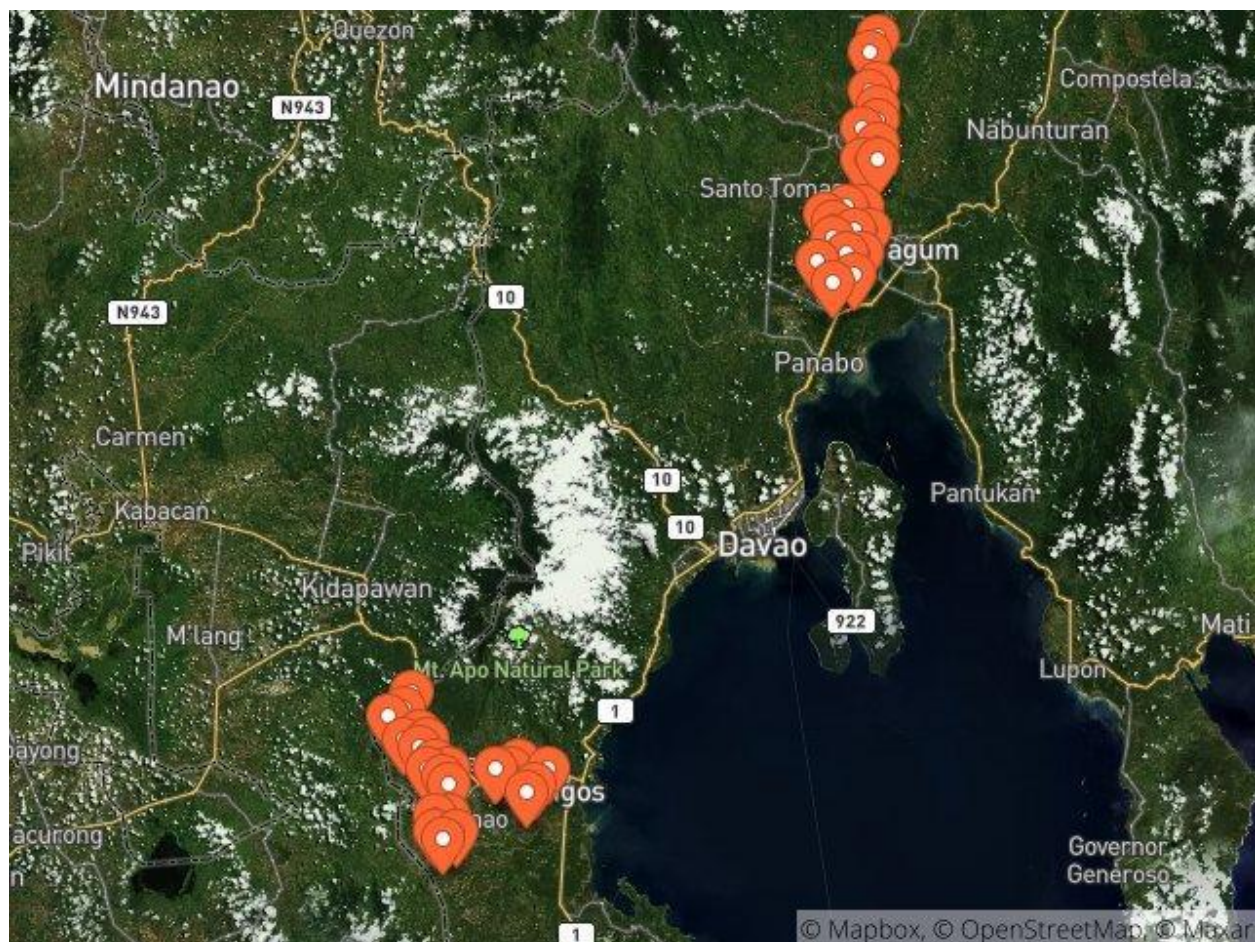
Monitored fields and data collectors

Municipalities surveyed:

Davao del Norte: Asuncion, Carmen, and Braulio E. Dujali

Davao del Sur: Hagonoy, Magsaysay, and Matanao

Monitoring date:

July 2019 - December 2019

Number of monitoring fields:

99 monitoring fields

Data collectors:

Geraldine Gaterin, Kelvin Arce, Mary Leign Palma, Melvin Desamparo, Victor Zeus Uyanguren, and Virgelio S Gutierrez

Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.
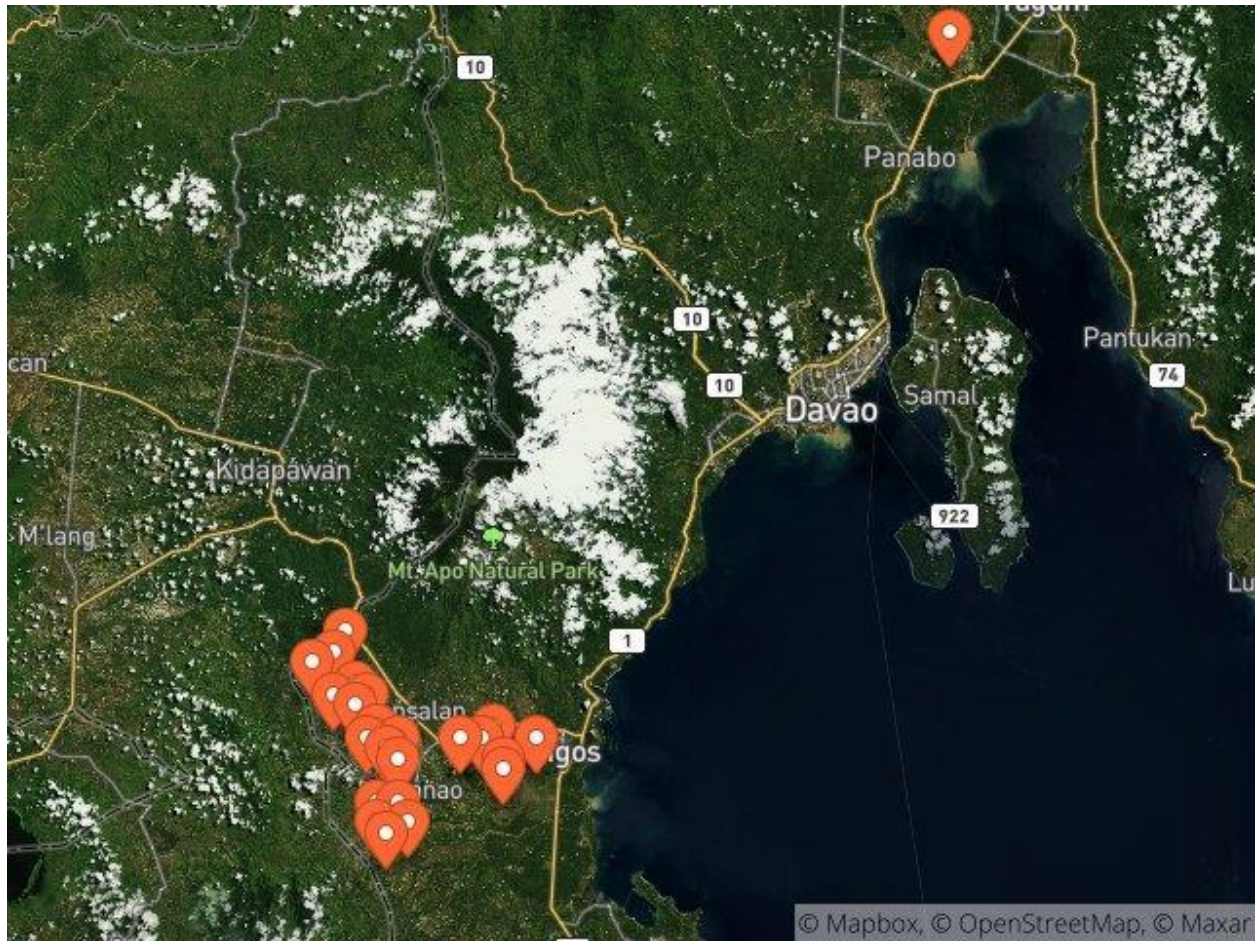
Figure 1. Monitored barangays in Region XI from July 2019 to December 2019. Each barangay is represented by 1 marker.

Municipalities surveyed:	Davao del Norte: Carmen
	Davao del Sur: Hagonoy, Magsaysay, and Matanao
Monitoring date:	July 2018 - December 2018
Number of monitoring fields:	41 monitoring fields
Data collectors:	Erma Mausisa, Geraldine Gaterin, Kelvin Arce, Mary Leign Palma, Melvin Desamparo, Rudolph Gabriel Salang Mapanao, Victor Zeus Uyanguren, and Virgelio S Gutierrez

Figure 2. Monitored barangays in Region XI from July 2018 to December 2018. Each barangay is represented by 1 marker.

Growth stage

Most of the fields monitored from July 2019 to December 2019 were at the vegetative stage in August and at the reproductive stage in October. The peak of transplanting was in July and August and the peak of harvest occurred in October (Figure 3). Majority of the fields were fallow in November and December.
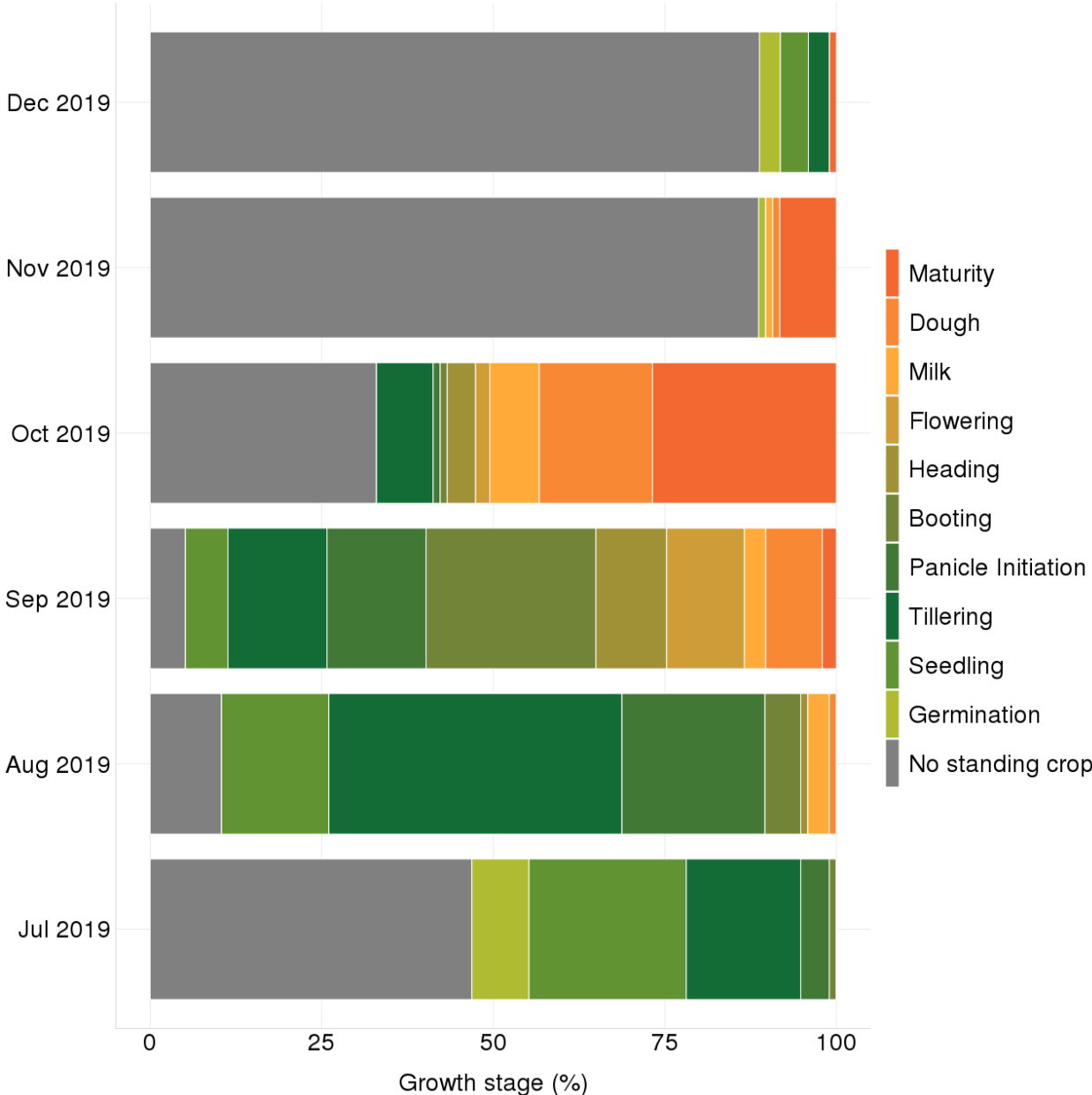

Figure 3. Proportion of crop growth stages of fields by month.

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

Most of the fields monitored from July 2018 to December 2018 were at the vegetative stage in July to August and at reproductive stage in October (Figure 4). These months also coincided with the peaks of transplanting and harvest, respectively. Majority of the fields were fallow in November.
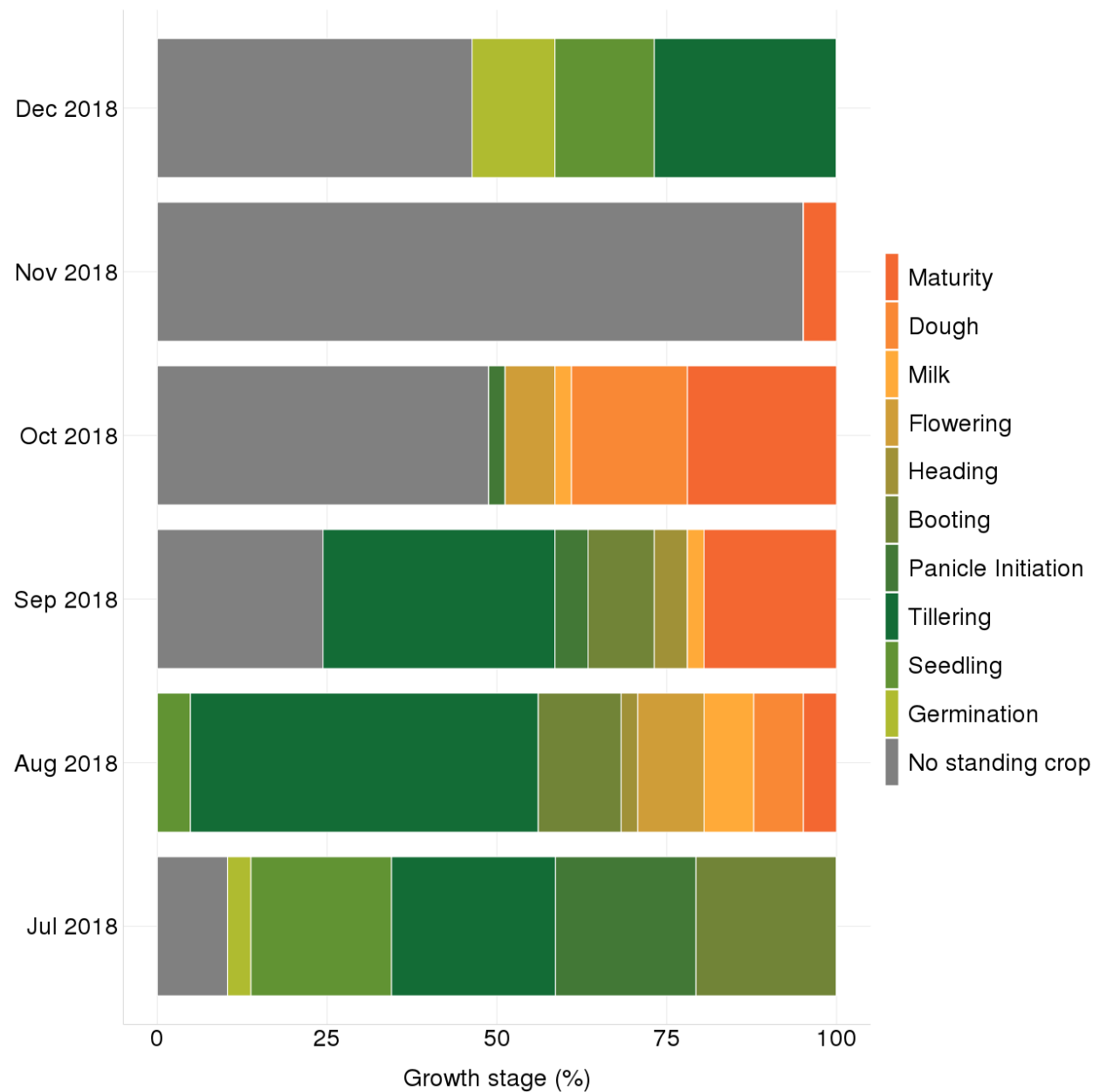

Figure 4. Proportion of crop growth stages of fields by month.

Incidence of pest injuries, count of insect pests, and weed cover

Box plots, also known box-and-whisker plots, are presented to facilitate the visualization of the distribution or range of collected data (Figures 5 to 18). 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

The incidence of bacterial blight was the highest among foliar diseases. The highest incidence was 3%. The incidence of the other foliar diseases was either negligible or low.
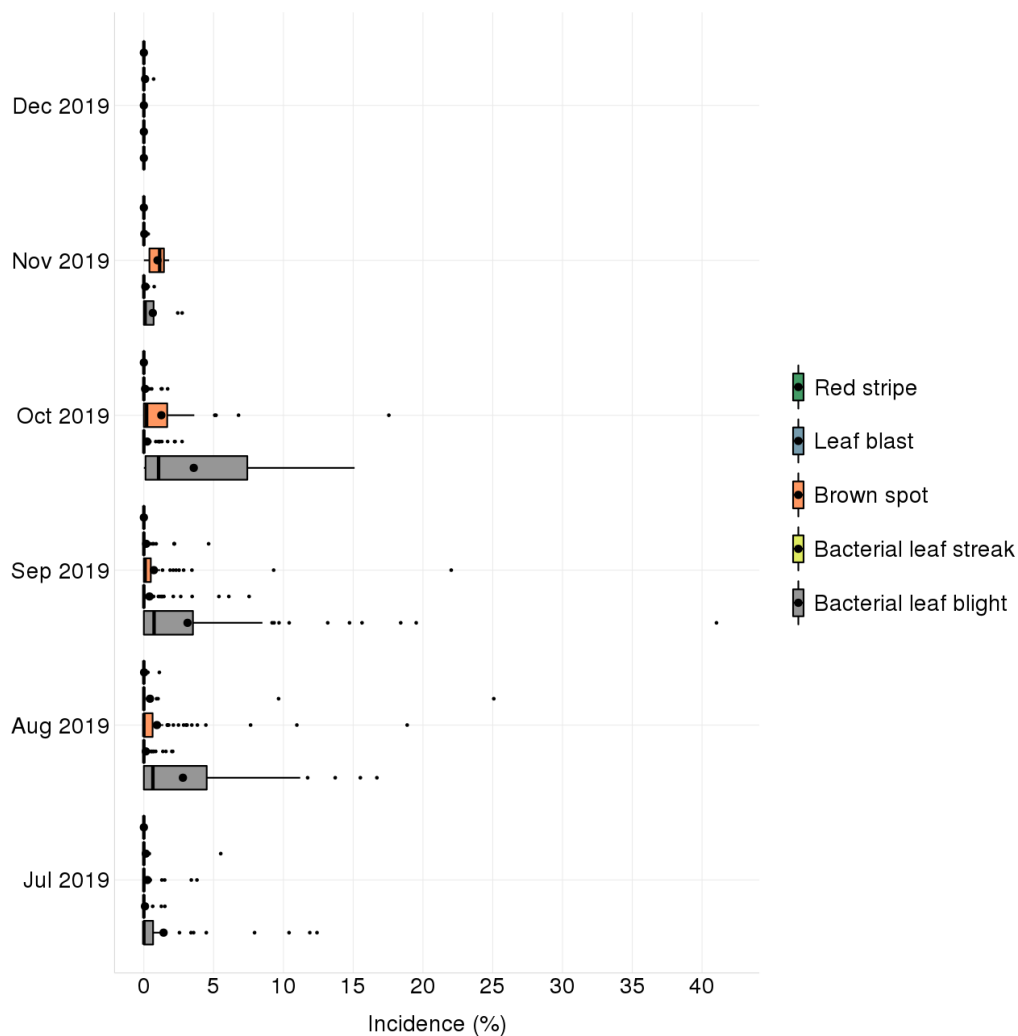

Figure 5. Incidence of foliar diseases in Region XI, July 2019 to December 2019.

In the second semester of 2018, high incidence of bacterial blight and brown spot were observed. The highest incidence of bacterial blight and brown spot was 14% and 10%, respectively.
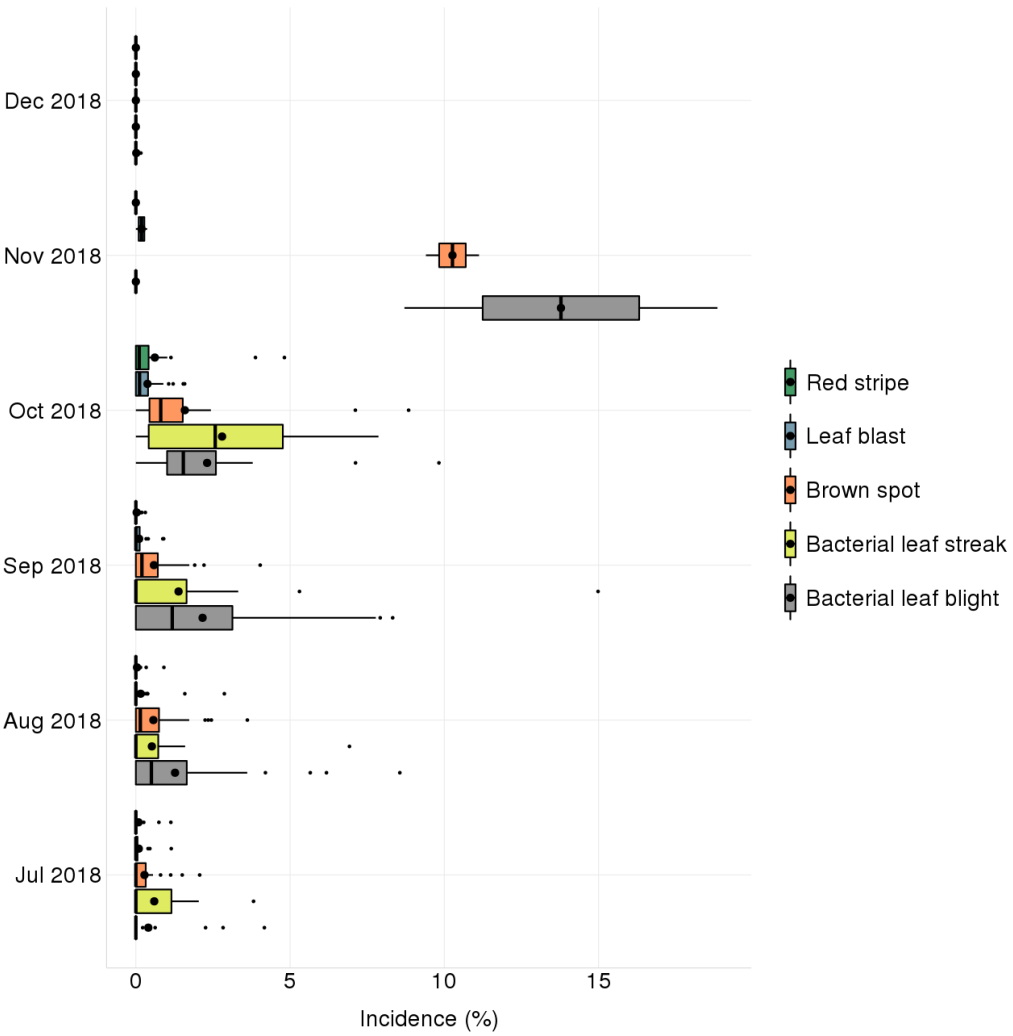
Figure 6. Incidence of foliar diseases in Region XI, July 2018 to December 2018.

B. Insect pest injuries and diseases on tillers

Low levels of deadheart and sheath blight incidence were observed in 2019. The highest incidence of deadheart and sheath blight was 2% and 1%, respectively.
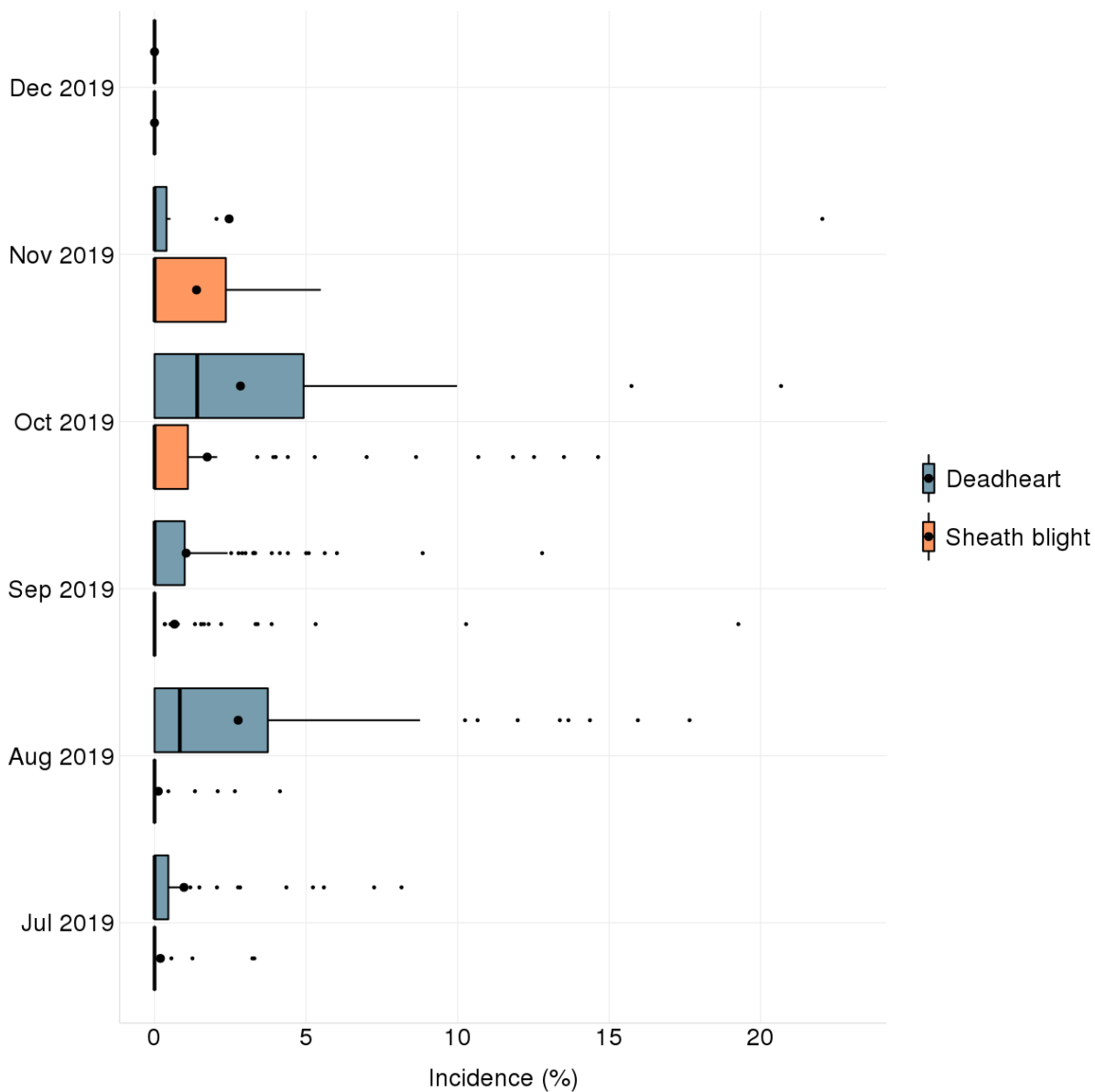
Figure 7. Incidence of deadheart and sheath blight in Region XI, July 2019 to December 2019.

In the second semester of 2018, the incidence of deadheart and sheath blight was also low. The highest level was 2% for both pest injuries.
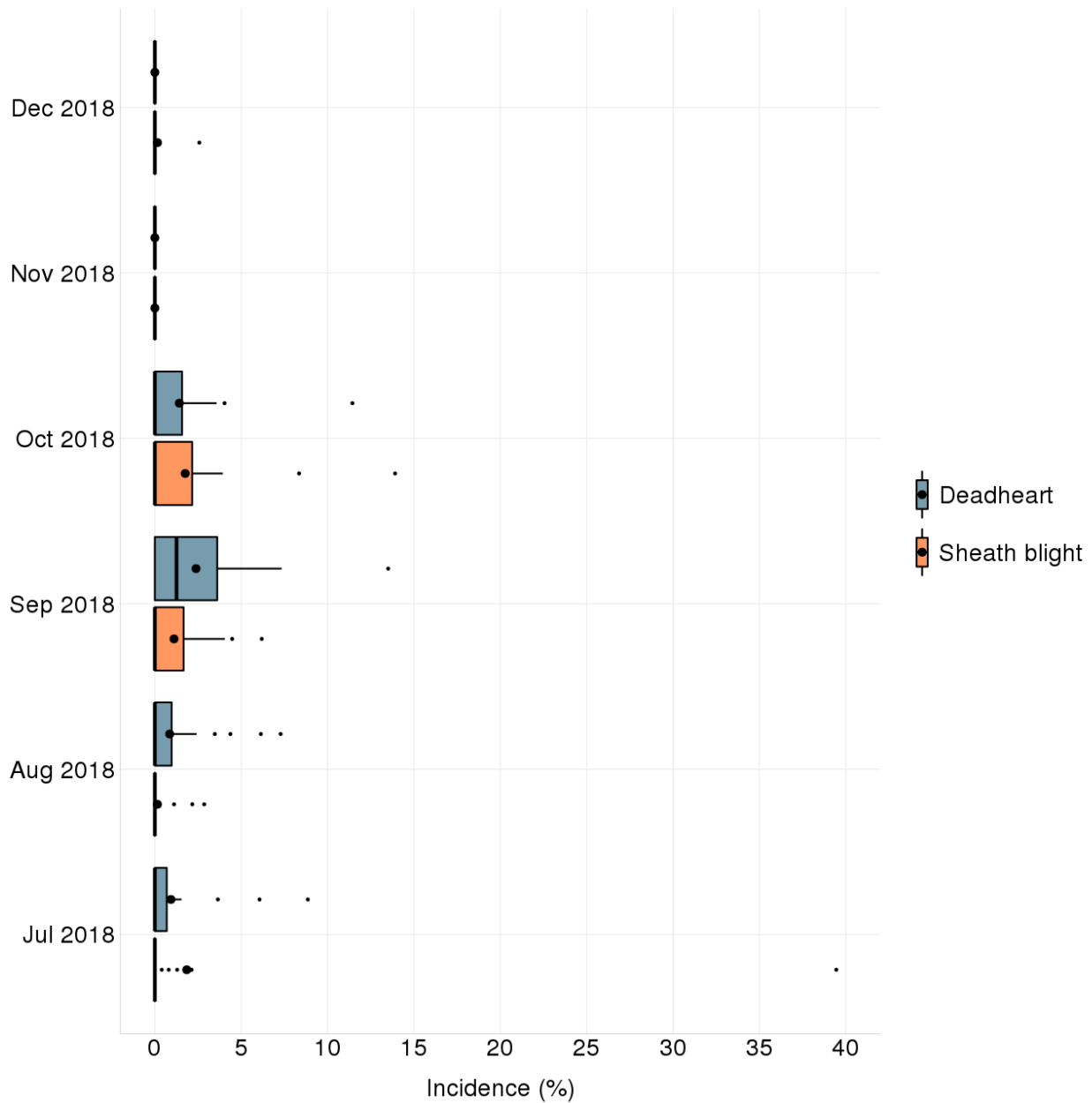
Figure 8. Incidence of deadheart and sheath blight in Region XI, July 2018 to December 2018.

C. Insect pest injuries and diseases on panicles

High incidence of whitehead (11%) was observed in November 2019. The incidence of neck blast, the highest incidence observed was 2%.
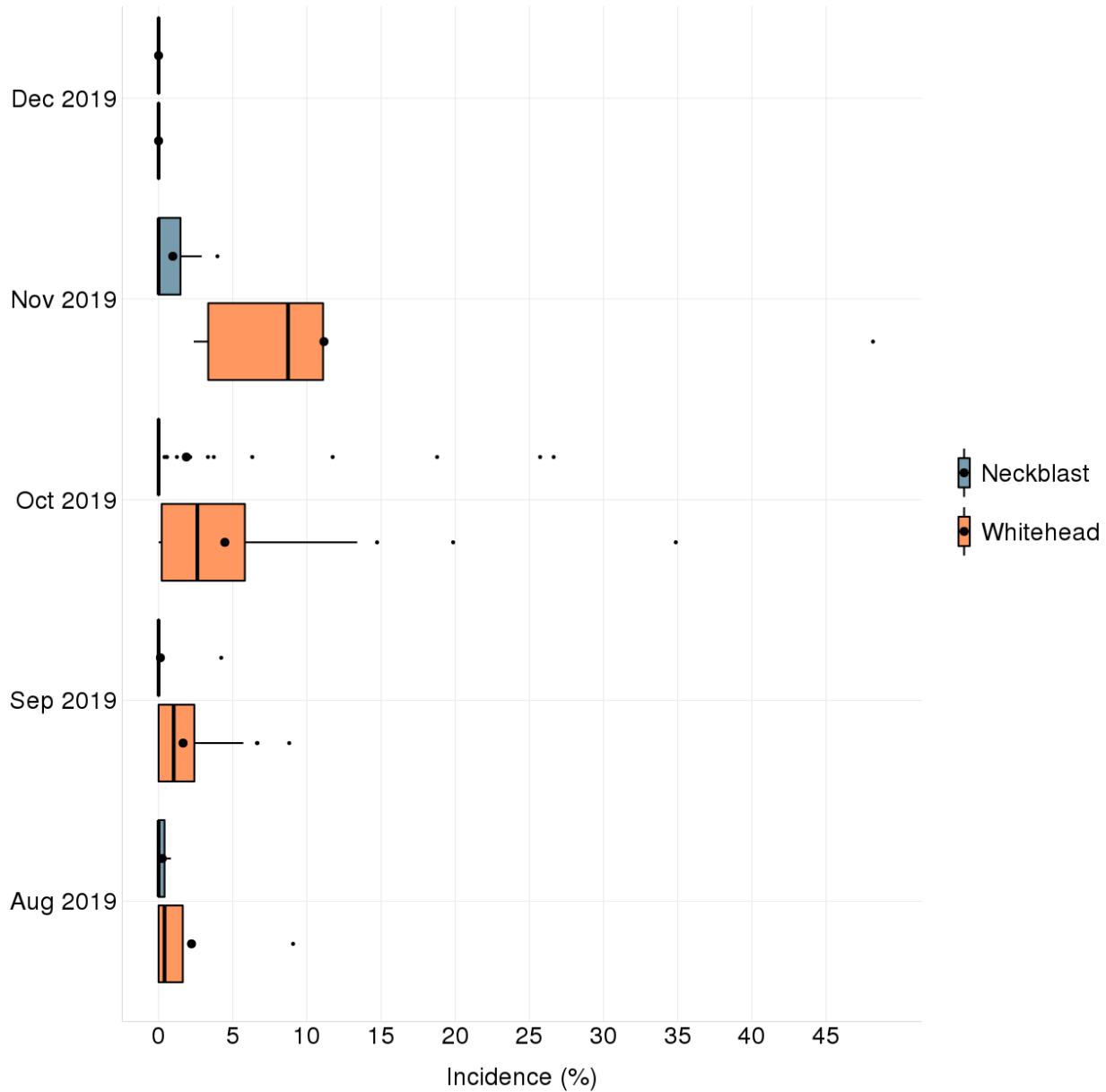
Figure 9. Incidence of neck blast and whitehead in Region XI, July 2019 to December 2019.

In the second semester of 2018, the highest whitehead incidence of 6% was observed in September and November and the highest neck blast incidence of 17% was observed in November.

Figure 10. Incidence of neck blast and whitehead in Region XI, July 2018 to December 2018.

D. Systemic diseases and insect pest injuries

Bugburn and hopperburn were not observed and the highest incidence of tungro was 2% in the second semester of 2019. (Figure 11).
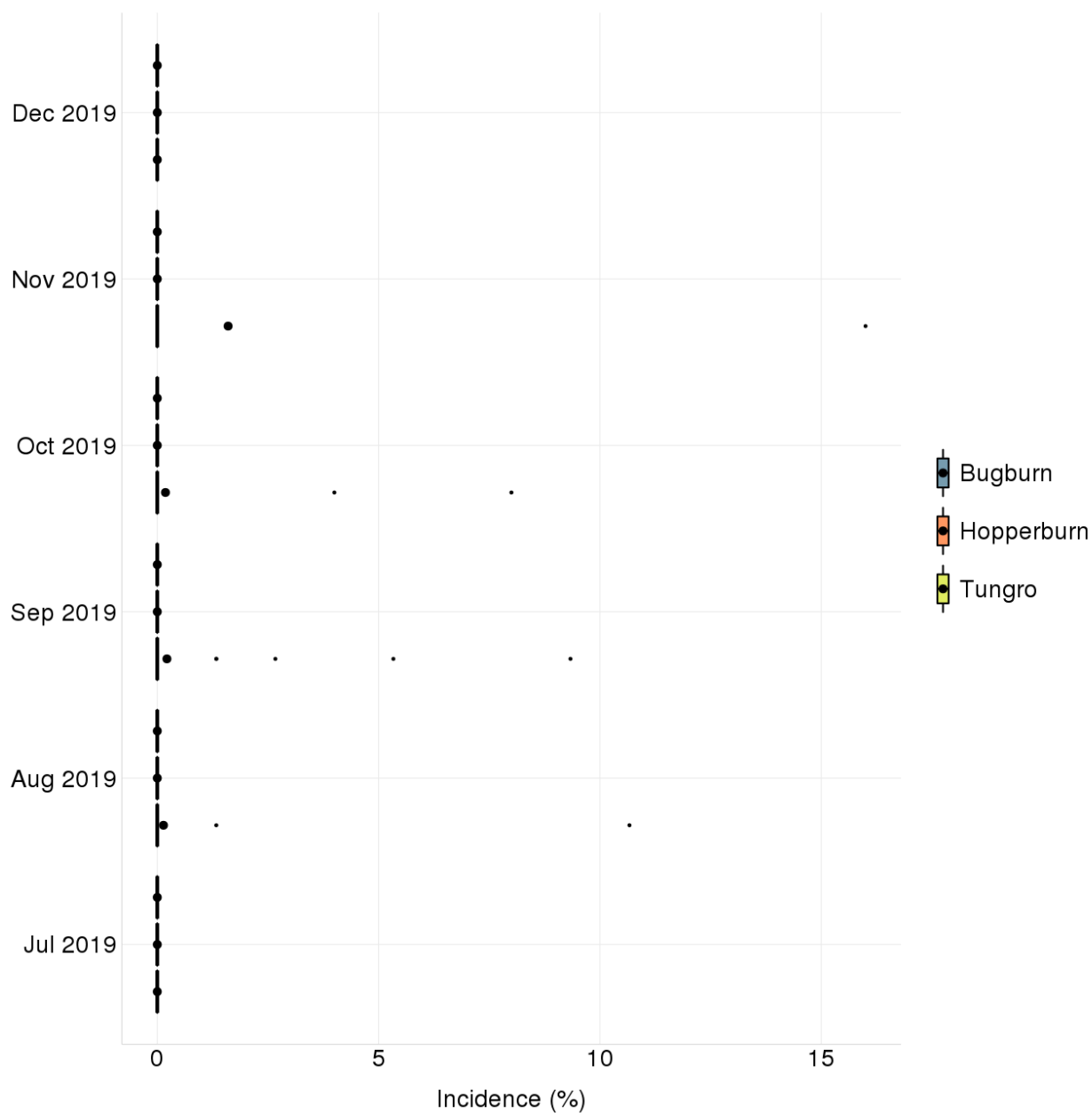
Figure 11. Incidence of bugburn, hopperburn and tungro in Region XI, July 2019 to December 2019.

The incidence of bugburn. hopperburn and tungro during the year was negligible (Figure 12).
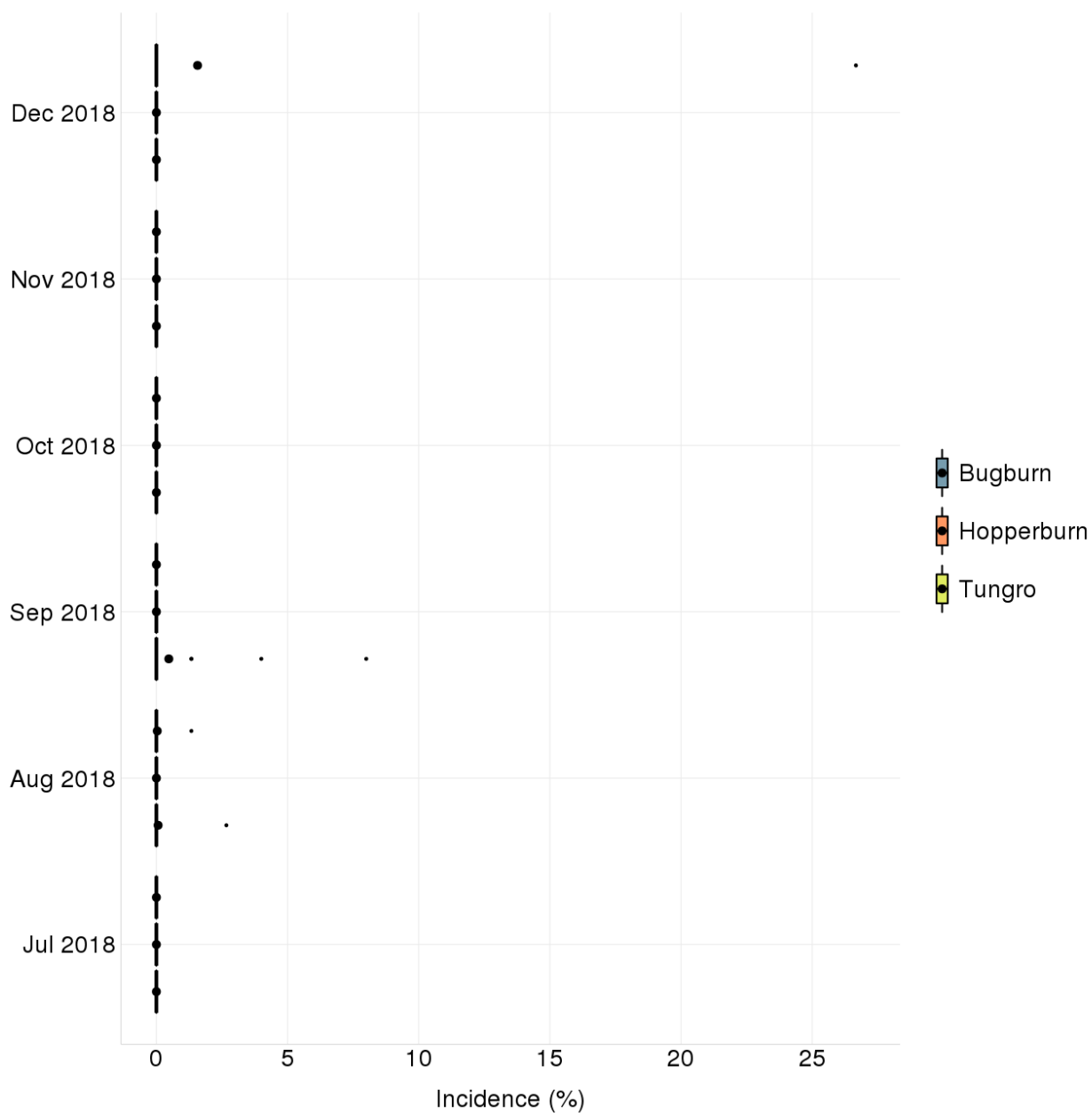
Figure 12. Incidence of bugburn, hopperburn and tungro in Region XI, July 2018 to December 2018.

E. Insect count

The number of insect pests observed in monitored fields was negligible to low in the second semester of 2019.
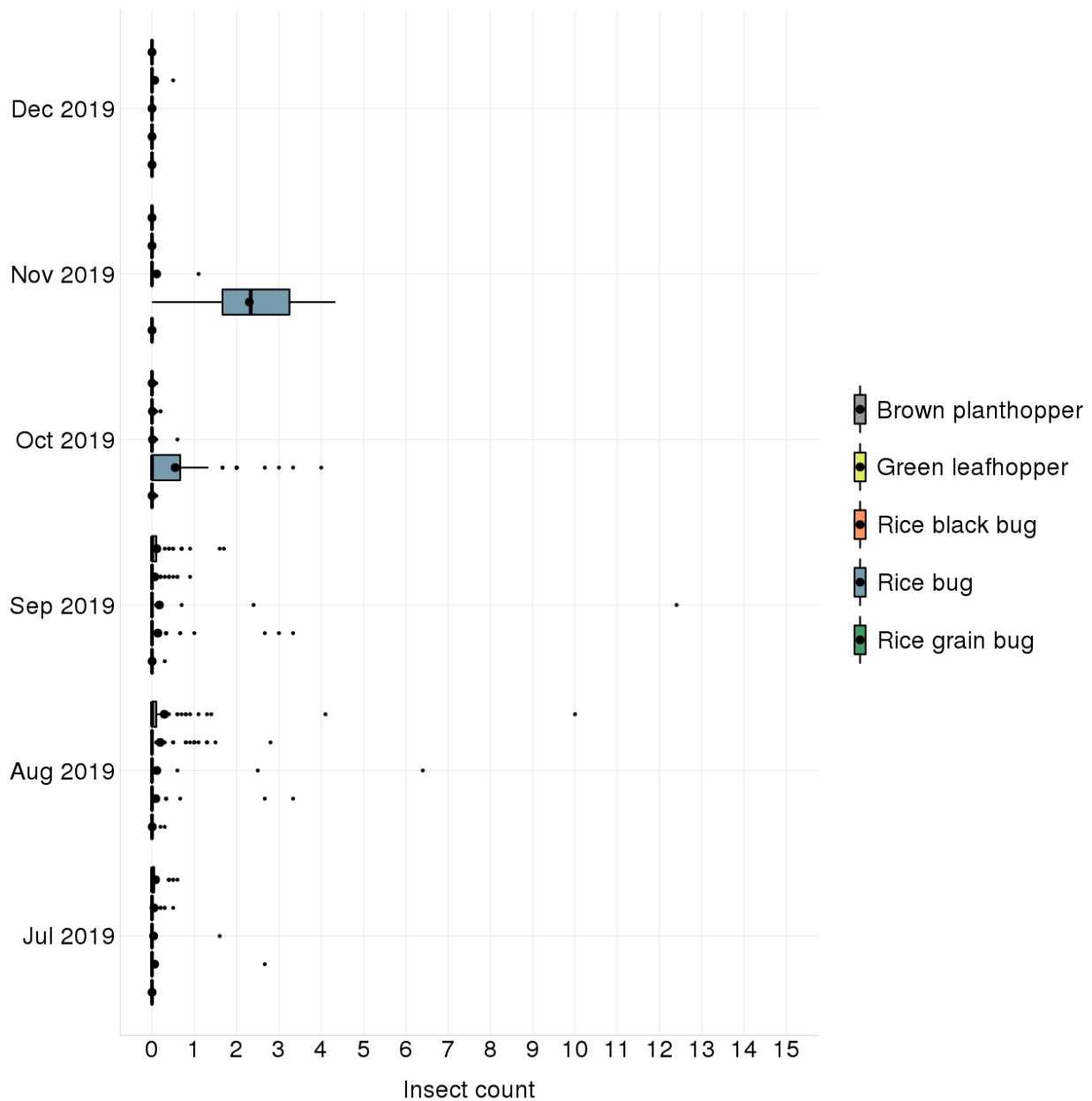
Figure 13. Count of insect pests in Region XI, July 2019 to December 2019.

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

More brown planthoppers and rice bugs were observed in the field during the second semester of 2018 than during the same period in 2019. The highest number of brown planthopper and rice bug was 3 and 6, respectively. The count of these and other insect pests was negligible in the other months.
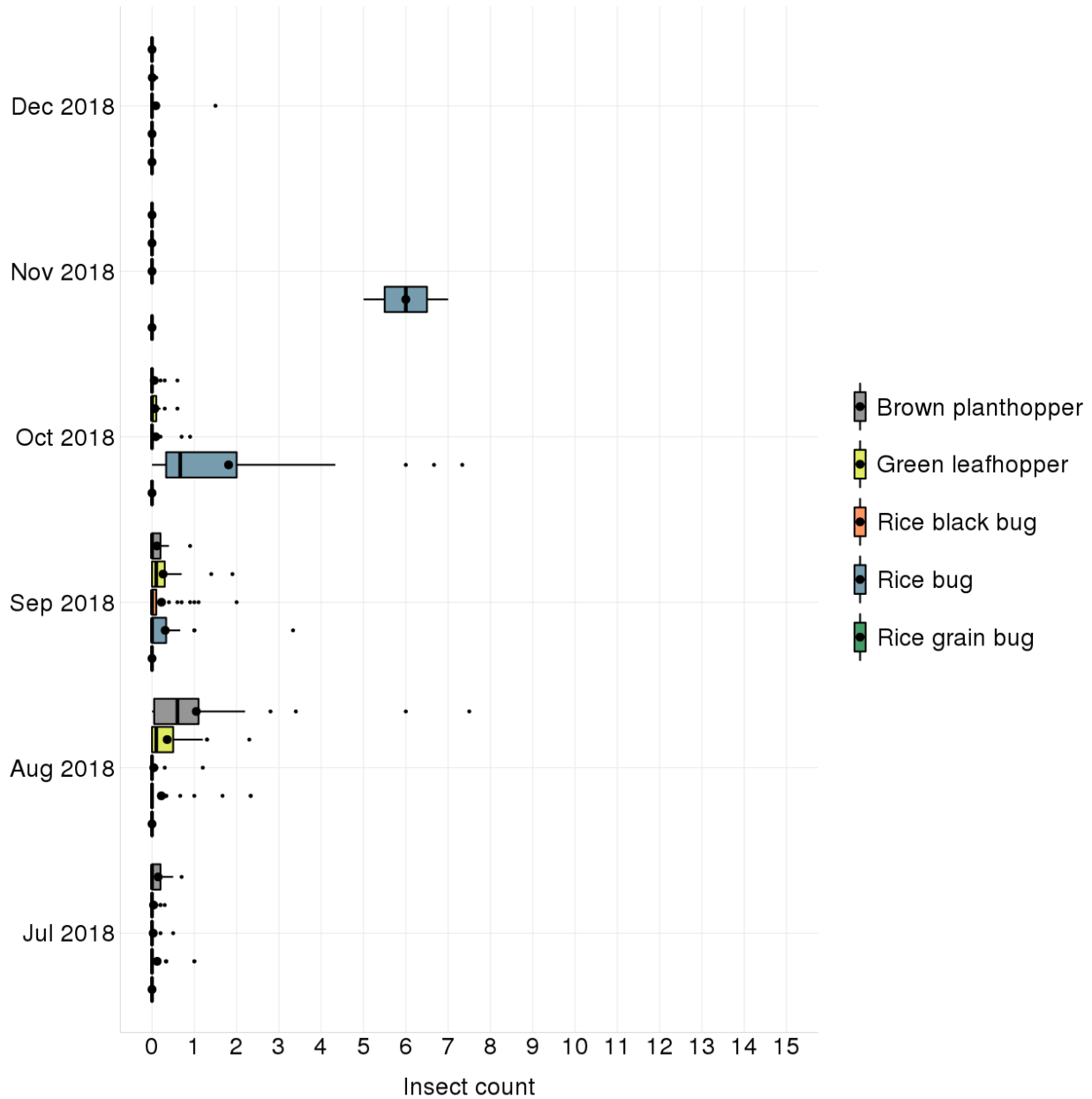
Figure 14. Count of insect pests in Region XI, July 2018 to December 2018.

F. Rodent injury

The incidence of rodent injury during the period was negligible (Figure 15).
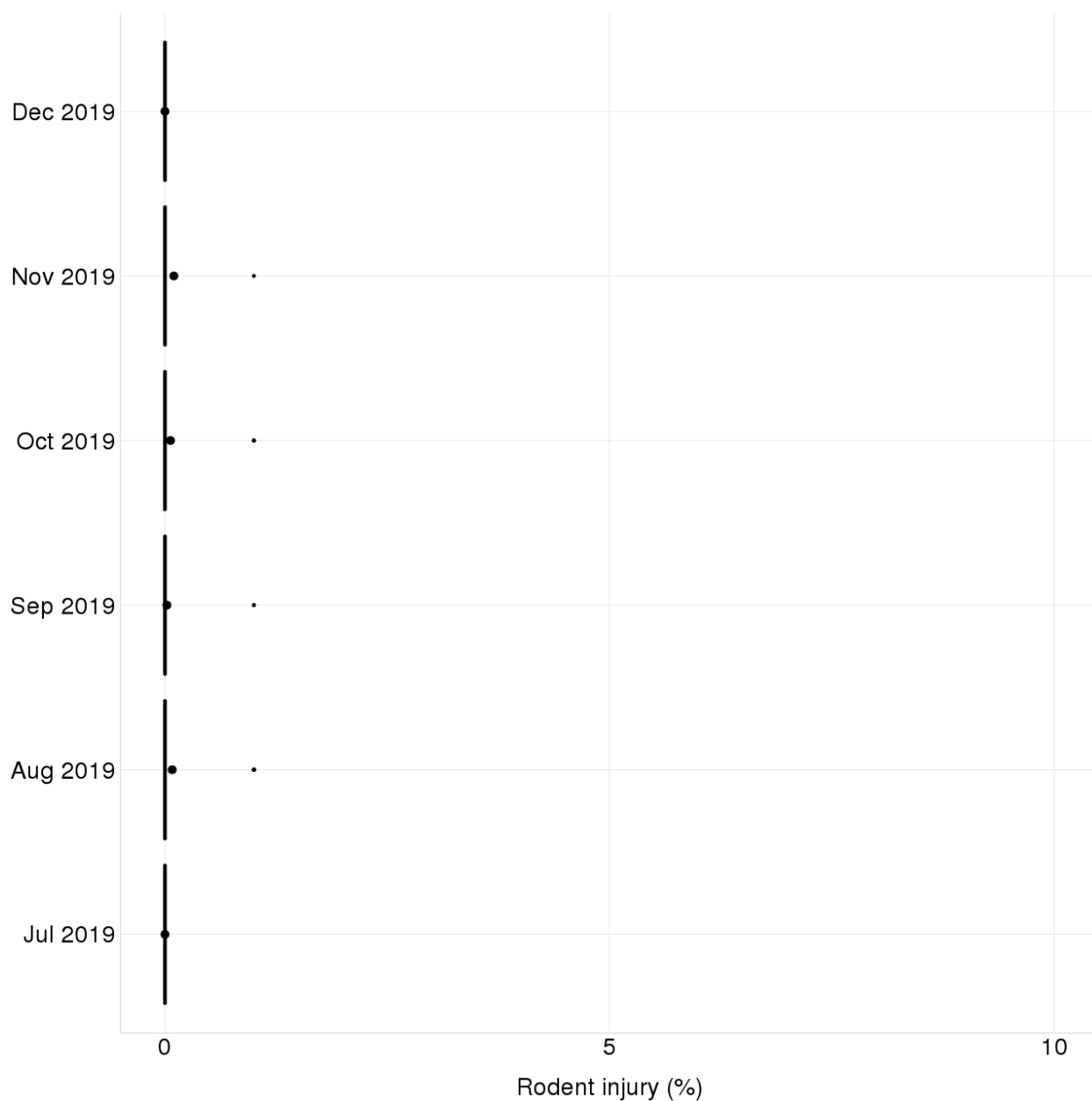
Figure 15. Incidence of rodent injury in Region XI, July 2019 to December 2019.

The incidence of rodent injury during the period was negligible (Figure 16).
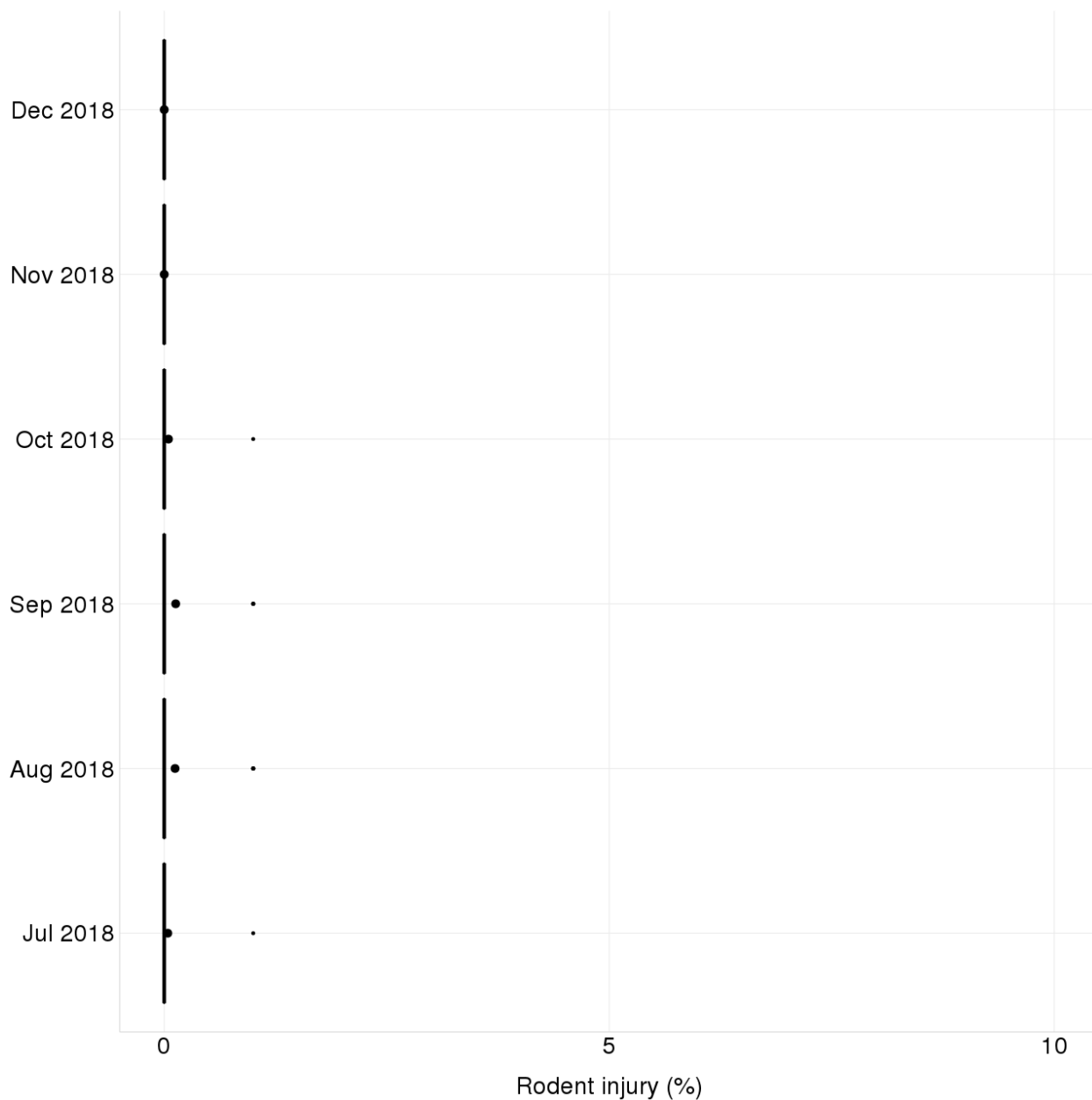
Figure 16. Incidence of rodent injury in Region XI, July 2018 to December 2018.

G. Weed cover

In 2019, the intensity of weed cover ranged from 4% to 7% from August to October. The rice plants were at vegetative to reproductive stages during these months.
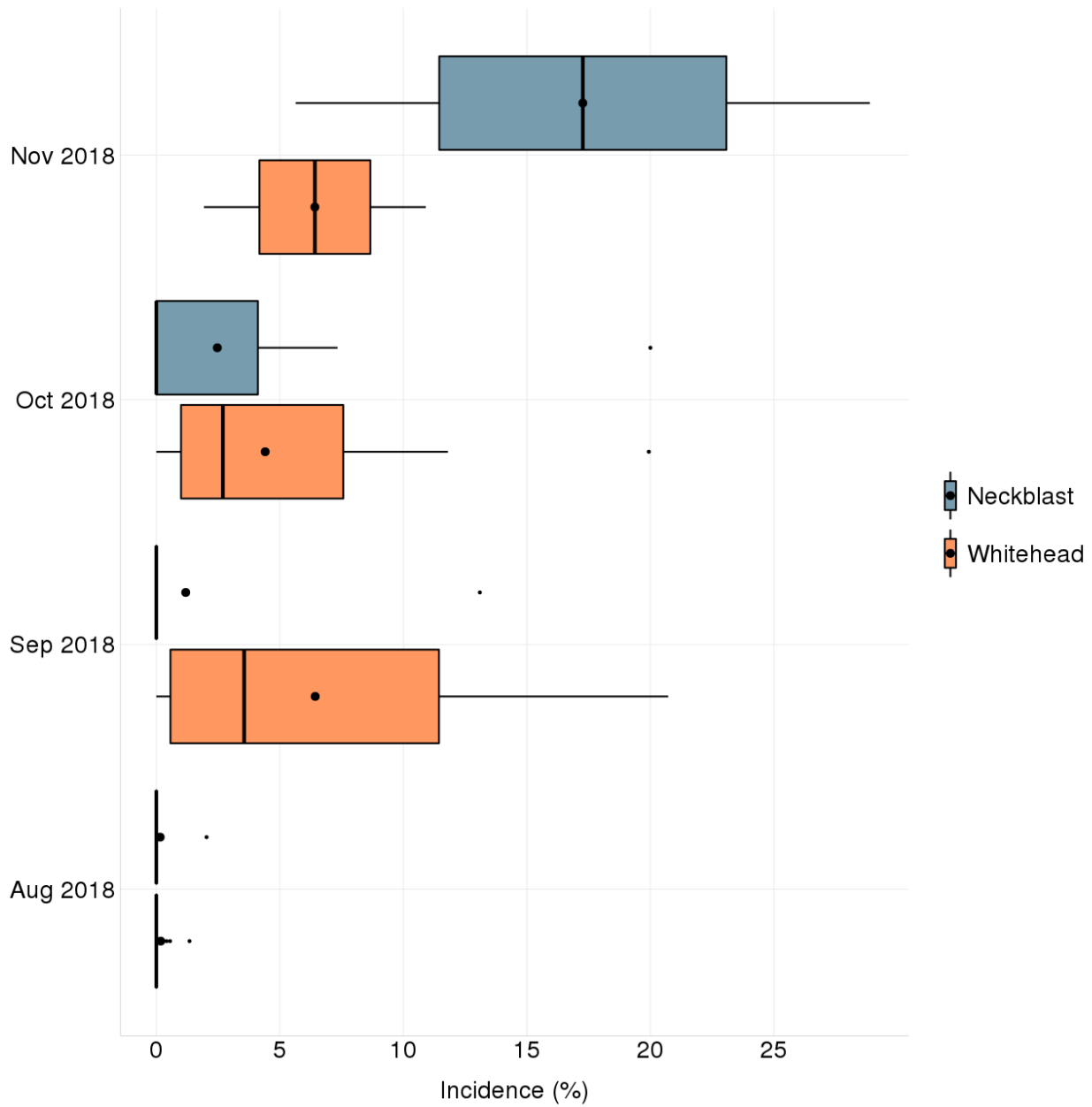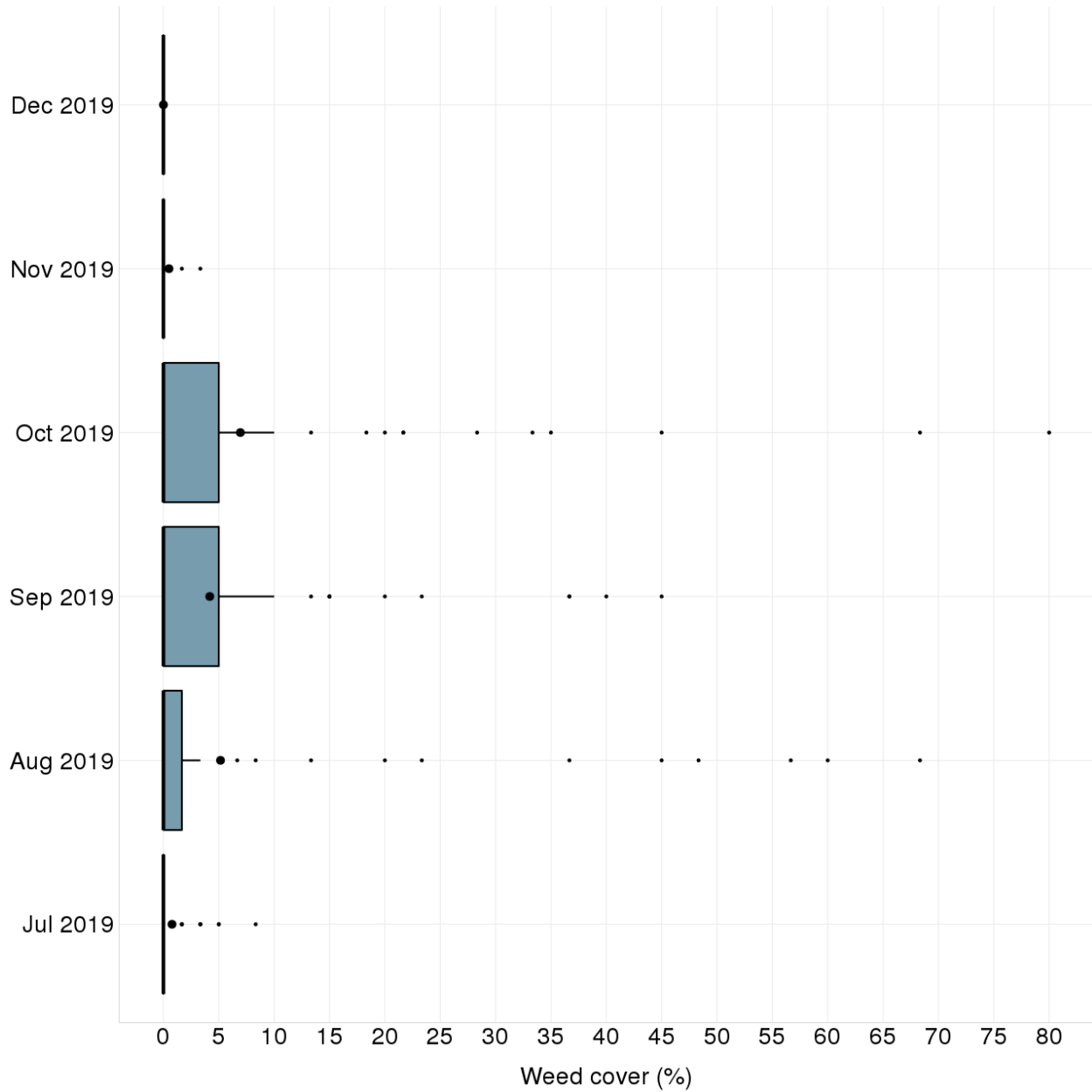

Figure 17. Percentage of weed cover in Region XI, July 2019 to December 2019.

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The intensity of weed cover was more severe in the second semester of 2018. The highest intensity of 27% which was observed in November. However, most of the fields in this months were fallow.
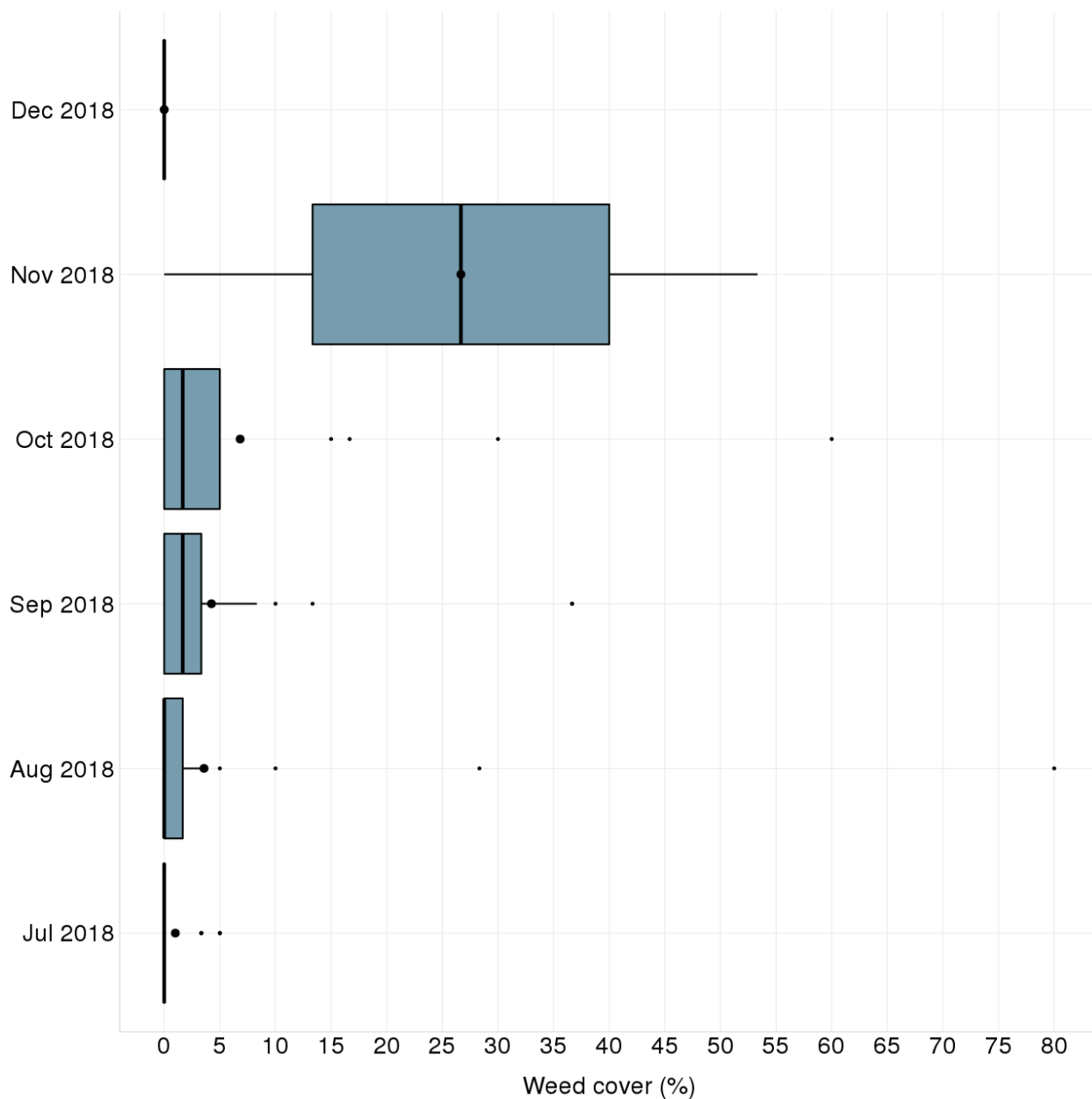
Figure 18. Percentage of weed cover in Region XI, July 2018 to December 2018.

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 in at least one month was 5% or higher.

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 that controls weeds. 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 feasible, 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.

Bacterial leaf blight

1. The most practical and economical approach to manage blast 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 creates a favorable microclimate for disease development (reduced sunlight penetration, longer leaf wetness duration and cooler temperature).

3. Apply only the recommended amount of nitrogen. Excessive amount of nitrogen favors the development of most rice diseases.

4. Manage the application of nutrient fertilizer. 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 creates a dense canopy that results in favorable microclimate for disease development.

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.

11. Avoid ratooning because the pathogen can survive on ratoon.

12. Keep the field dry during the fallow period to control the pathogens in infected stubbles.

Deadheart and whitehead caused by stemborer

1. Know 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. 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.

7. Remove alternate hosts during the cropping season and fallow period.

8. 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.

9. 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 are 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. Insecticides should be used as the last resort and should be integrated with other methods to conserve natural enemies.

Leaf blast and neck blast

1. The most practical and economical approach to manage blast 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. Practice planting synchrony with defined fallow period in your area. If this is not possible, a farmer who intends to grow a susceptible variety should not plant rice later than most farmers' fields.

3. Use optimum seeding rate (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 creates a favorable microclimate for disease development (reduced sunlight penetration, longer leaf wetness duration and cooler temperature).

4. Apply only the recommended amount of nitrogen. Excessive amount of nitrogen favors the development of most rice diseases.

5. Manage the application of nutrient fertilizer. 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 creates a dense canopy that results in favorable microclimate for disease development.

6. Apply potassium and other required nutrients in addition to nitrogen. Potassium reduces the amount of most rice diseases.

7. Apply calcium silicate fertilizer or silicon fertilizer when feasible.

8. Irrigate the field continuously until one week before harvest. Do not drain the field for long periods because drought stress favors blast.

9. Use fungicides as last resort in controlling the disease. To control neck blast, apply fungicide at late booting and heading stages if leaf blast increases before booting stage and if it is always raining. Pathogens become resistant to chemical pesticides if these are not used properly. 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.

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.

11. Avoid ratooning because the pathogen can survive on ratoon.

12. Keep the field dry during the fallow period to control the pathogens in infected stubbles.

Annexes

Region XI		2018						2019					
Davao del Norte		JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
A. FOLIAR DISEASES													
Bacterial leaf blight	mean	0.0	6.2	1.5	2.6	0.0	0.0	0.7	3.5	4.5	3.7	1.4	0.0
	median	0.0	6.2	1.5	2.6	0.0	0.0	0.0	1.2	1.8	1.7	1.4	0.0
	maximum	0.0	6.2	1.5	2.6	0.0	0.0	12.4	16.7	41.0	15.1	2.7	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Bacterial leaf streak	mean	0.0	0.5	1.6	3.9	0.0	0.0	0.1	0.2	0.6	0.2	0.0	0.0
	median	0.0	0.5	1.6	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.5	1.6	3.9	0.0	0.0	1.5	2.0	7.5	2.7	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Brown spot	mean	0.0	1.2	0.9	1.5	0.0	0.0	0.1	1.4	1.0	1.4	1.6	0.0
	median	0.0	1.2	0.9	1.5	0.0	0.0	0.0	0.3	0.2	0.2	1.6	0.0
	maximum	0.0	1.2	0.9	1.5	0.0	0.0	3.4	18.9	22.0	17.6	1.7	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Leaf blast	mean	0.0	0.0	0.1	1.6	0.0	0.0	0.0	0.7	0.2	0.1	0.2	0.0
	median	0.0	0.0	0.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
	maximum	0.0	0.0	0.1	1.6	0.0	0.0	0.4	25.1	4.6	1.7	0.3	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Red stripe	mean	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	3.9	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
B. DISEASE OR PEST INJURY ON TILLERS													
Deadheart	mean	0.0	1.4	1.2	1.6	0.0	0.0	0.5	3.6	0.9	2.9	11.0	0.0
	median	0.0	1.4	1.2	1.6	0.0	0.0	0.0	2.1	0.0	1.0	11.0	0.0
	maximum	0.0	1.4	1.2	1.6	0.0	0.0	7.3	17.7	8.9	20.7	22.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Sheath Blight	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9	2.3	2.7	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.7	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	19.3	13.5	5.5	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
LEGEND													
Blue font		> 5 to 10 % incidence of diseases, insect pest injuries or weed cover or 5 to 10 insects.											
Red font		> 10 % incidence of diseases, insect pest injuries or weed cover or > 10 insects.											

Annex 1. Incidence of diseases or pest injuries during the previous 2nd semesters.

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Region XI		2018						2019					
Davao del Norte		JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
C. DISEASE OR PEST INJURY ON PANICLES													
Neck Blast	mean	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	2.5	1.5	0.0
	median	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
	maximum	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	26.6	2.9	0.0
	count	0	0	0	1	0	0	0	0	21	37	2	0
Whitehead	mean	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	1.4	5.3	29.3	0.0
	median	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	2.9	29.3	0.0
	maximum	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	6.7	34.9	48.2	0.0
	count	0	0	0	1	0	0	0	0	21	37	2	0
D. SYSTEMIC DISEASE OR PEST INJURY													
Bugburn	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Hopperburn	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Tungro	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	9.3	4.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0

LEGEND	
Blue font	> 5 to 10 % incidence of diseases, insect pest injuries or weed cover or 5 to 10 insects.
Red font	> 10 % incidence of diseases, insect pest injuries or weed cover or > 10 insects.

Annex 2. Incidence of diseases or pest injuries during the previous 2nd semesters.

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

Region XI		2018						2019					
Davao del Norte		JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
E. INSECT COUNT													
Brown Planthopper	mean	0.0	1.9	0.2	0.0	0.0	0.0	0.0	0.9	0.2	0.0	0.0	0.0
	median	0.0	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	1.9	0.2	0.0	0.0	0.0	0.5	28.0	1.7	0.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Green Leafhopper	mean	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0
	median	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	1.2	0.0	0.0	0.0	0.0	0.3	18.1	0.6	0.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Rice Black Bug	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	24.0	0.1	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Rice Bug	mean	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.1	0.3	1.8	0.0
	median	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0
	maximum	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.7	3.3	2.0	2.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
Rice Grain Bug	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
F. RODENT INJURY	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
G. WEED COVER	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.9	7.5	3.9	7.7	0.8	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.8	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	8.3	68.3	40.0	80.0	1.7	0.0
	count	1	1	1	1	0	0	27	55	57	39	2	0
LEGEND													
Blue font		> 5 to 10 % incidence of diseases, insect pest injuries or weed cover or 5 to 10 insects.												
Red font		> 10 % incidence of diseases, insect pest injuries or weed cover or > 10 insects.												

Annex 3. Incidence of pest injuries, count of insect pests, and percentage of weed cover during the previous 2nd semesters.

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

Region XI		2018						2019					
Davao del Sur		JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
A. FOLIAR DISEASES													
Bacterial leaf blight	mean	0.4	1.2	2.2	2.3	13.8	0.0	2.7	1.6	0.9	3.4	0.5	0.0
	median	0.0	0.4	1.1	1.5	13.8	0.0	0.7	0.0	0.0	0.3	0.1	0.0
	maximum	4.2	8.6	8.3	9.8	18.9	0.2	11.9	10.0	18.4	14.5	2.4	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Bacterial leaf streak	mean	0.6	0.5	1.4	2.7	0.0	0.0	0.1	0.1	0.1	0.3	0.1	0.0
	median	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	3.8	6.9	15.0	7.9	0.0	0.0	1.3	2.1	3.5	2.2	0.7	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Brown spot	mean	0.3	0.6	0.6	1.6	10.3	0.0	0.5	0.1	0.3	1.1	0.8	0.0
	median	0.0	0.1	0.2	0.8	10.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0
	maximum	2.1	3.6	4.0	8.8	11.1	0.0	3.8	1.7	3.4	5.2	1.8	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Leaf blast	mean	0.1	0.2	0.1	0.3	0.2	0.0	0.3	0.0	0.2	0.0	0.0	0.1
	median	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	1.2	2.9	0.9	1.5	0.4	0.0	5.5	0.0	2.2	0.3	0.0	0.7
	count	24	40	30	20	2	17	16	31	35	26	8	8
Red stripe	mean	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	1.1	0.9	0.3	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
B. DISEASE OR PEST INJURY ON TILLERS													
Deadheart	mean	1.0	0.8	2.4	1.4	0.0	0.0	1.8	1.2	1.4	2.7	0.3	0.0
	median	0.0	0.0	1.3	0.0	0.0	0.0	1.0	0.0	0.0	2.1	0.0	0.0
	maximum	8.9	7.3	13.5	11.4	0.0	0.0	8.2	13.7	12.8	8.8	2.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Sheath Blight	mean	1.9	0.2	1.2	1.9	0.0	0.2	0.5	0.1	0.3	0.9	1.1	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	39.5	2.9	6.2	13.9	0.0	2.6	3.3	2.1	3.4	14.6	4.4	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8

LEGEND	
Blue font	> 5 to 10 % incidence of diseases, insect pest injuries or weed cover or 5 to 10 insects.
Red font	> 10 % incidence of diseases, insect pest injuries or weed cover or > 10 insects.

Annex 4. Incidence of diseases or pest injuries during the previous 2nd semesters.

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

Region XI		2018						2019					
Davao del Sur		JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
C. DISEASE OR PEST INJURY ON PANICLES													
Neck Blast	mean	0.0	0.2	1.2	2.4	17.3	0.0	0.0	0.3	0.3	0.5	0.8	0.0
	median	0.0	0.0	0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	2.0	13.1	20.0	28.9	0.0	0.0	0.8	4.2	3.7	4.0	0.0
	count	0	13	11	19	2	0	0	5	13	18	8	1
Whitehead	mean	0.0	0.2	6.4	4.2	6.4	0.0	0.0	2.2	2.1	2.7	6.6	0.0
	median	0.0	0.0	3.6	2.7	6.4	0.0	0.0	0.4	1.3	1.7	5.9	0.0
	maximum	0.0	1.3	20.7	19.9	10.9	0.0	0.0	9.1	8.8	10.5	11.1	0.0
	count	0	13	11	19	2	0	0	5	13	18	8	1
D. SYSTEMIC DISEASE OR PEST INJURY													
Bugburn	mean	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	1.3	0.0	0.0	0.0	26.7	0.0	0.0	0.0	0.0	0.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Hopperburn	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Tungro	mean	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.3	0.2	0.3	2.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	2.7	8.0	0.0	0.0	0.0	0.0	10.7	2.7	8.0	16.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8

LEGEND	
Blue font	> 5 to 10 % incidence of diseases, insect pest injuries or weed cover or 5 to 10 insects.
Red font	> 10 % incidence of diseases, insect pest injuries or weed cover or > 10 insects.

Annex 5. Incidence of diseases or pest injuries during the previous 2nd semesters.

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

Region XI		2018						2019					
Davao del Sur		JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
E. INSECT COUNT													
Brown Planthopper	mean	0.2	3.4	0.1	0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
	median	0.1	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	maximum	0.7	**67.6**	0.9	0.6	0.0	0.0	0.6	1.3	0.7	0.1	0.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Green Leafhopper	mean	0.0	0.3	0.3	0.1	0.0	0.0	0.1	0.4	0.1	0.0	0.0	0.1
	median	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	maximum	0.3	2.3	1.9	0.6	0.0	0.1	0.5	2.8	0.9	0.2	0.0	0.5
	count	24	40	30	20	2	17	16	31	35	26	8	8
Rice Black Bug	mean	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.3	0.4	0.0	0.1	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.5	1.2	2.0	0.9	0.0	1.5	1.6	**6.4**	**12.4**	0.6	1.1	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Rice Bug	mean	0.1	0.2	0.3	1.5	**6.0**	0.0	0.2	0.2	0.2	0.9	2.4	0.0
	median	0.0	0.0	0.0	0.7	**6.0**	0.0	0.0	0.0	0.0	0.0	2.8	0.0
	maximum	1.0	2.3	3.3	**6.7**	**7.0**	0.0	2.7	3.3	3.0	4.0	4.3	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
Rice Grain Bug	mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
F. RODENT INJURY	mean	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
	median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8
G. WEED COVER	mean	1.0	3.7	4.4	**7.2**	**26.7**	0.0	0.6	1.0	4.7	**5.8**	0.4	0.0
	median	0.0	0.0	1.7	1.7	**26.7**	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	maximum	5.0	**80.0**	**36.7**	**60.0**	**53.3**	0.0	5.0	**23.3**	**45.0**	**35.0**	3.3	0.0
	count	24	40	30	20	2	17	16	31	35	26	8	8

LEGEND	
Blue font	> 5 to 10 % incidence of diseases, insect pest injuries or weed cover or 5 to 10 insects.
Red font	> 10 % incidence of diseases, insect pest injuries or weed cover or > 10 insects.

Annex 6. Incidence of pest injuries, count of insect pests, and percentage of weed cover during the previous 2nd semesters.

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