PRIME

PRE-SEMESTER BULLETIN

July 2018 to June 2019

REGION V – Bicol Region

AT A GLANCE

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

Region V

	2018						2019					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
A. FOLIAR DISEASES												
Bacterial leaf blight	1.7	0.6	1.6	1.1	2.5	1.5	0.5	1.0	0.7	0.7	1.0	0.4
Bacterial leaf streak	0.0	0.5	0.5	0.2	0.1	0.5	0.5	0.7	0.3	0.0	0.2	0.1
Brown spot	1.2	1.2	2.7	2.7	4.3	4.4	3.0	4.0	5.2	3.3	3.5	3.2
Leaf blast	0.0	0.9	0.8	0.8	2.1	1.7	1.9	2.0	1.1	2.5	3.4	1.5
Red stripe	0.0	0.1	0.2	0.1	0.0	0.9	1.2	2.0	3.0	1.5	2.5	3.6
B. DISEASE OR PEST INJURY ON TILLERS												
Deadheart	0.2	0.4	0.3	0.8	0.7	0.7	0.1	0.5	0.4	0.2	0.2	1.2
Sheath Blight	0	0.8	0.4	1.1	0	0.3	0.0	0.7	0.1	0.0	0	0.1
C. DISEASE OR PEST INJURY ON PANICLES												
Neck Blast	0	0.6	0.5	0.5	4.0	0.2	0	0.8	0.1	0.1	0.6	1.1
Whitehead	0	2.4	1.2	4.7	0	1.5	0	0.6	0.7	0.2	0	1.0
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	0	0	0	0	0	0	0	0	0
E. INSECT COUNT												
Brown Plant Hopper	0	0.1	0.2	0.1	0.3	0.2	0.2	0.2	0.0	0.1	0.1	0.1
Green Leaf Hopper	0.0	0.2	0.4	0.2	0.4	0.4	0.3	0.2	0.1	0.2	0.3	0.1
Rice Black Bug	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rice Bug	0	0.2	1.0	1.0	0.1	0.6	0.2	0.6	0.1	0.3	1.0	0.4
Rice Grain Bug	0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
F. RODENT INJURY	0.1	0.4	0.5	0.6	0.2	0.1	0.0	0.2	0.0	0.1	0.4	0.4
G. WEED COVER	0.4	3.1	4.5	2.8	6.3	4.1	1.8	1.4	1.7	2.6	4.7	1.0

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.

Monitored fields and data collectors

Municipalities surveyed:	Camarines Sur: Bula, Libmanan, Minalabac
Monitoring date:	July 2018 – June 2019
Number of monitored fields:	83 monitoring fields
Data collectors:	Adrian Pornillos, Catherine Comia, Clarenz Sabio, Godofredo Balmeo, Hansel Arcilla, Jay Ar Baldoza, Johnson Visitacion, Joseph Penaverde, Mark Francis Ibo, Mark Ibo, and Nathan Botin

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Growth stages

In the second semester of 2018, most of the monitored fields were transplanted in July and the peak of harvest was in September and October (Figure 1). Majority of the fields were fallow in November. In the first semester of 2019, the peak of transplanting was in December to January and harvesting peaked in April 2019. A large proportion of the fields were fallow in May to June 2019.

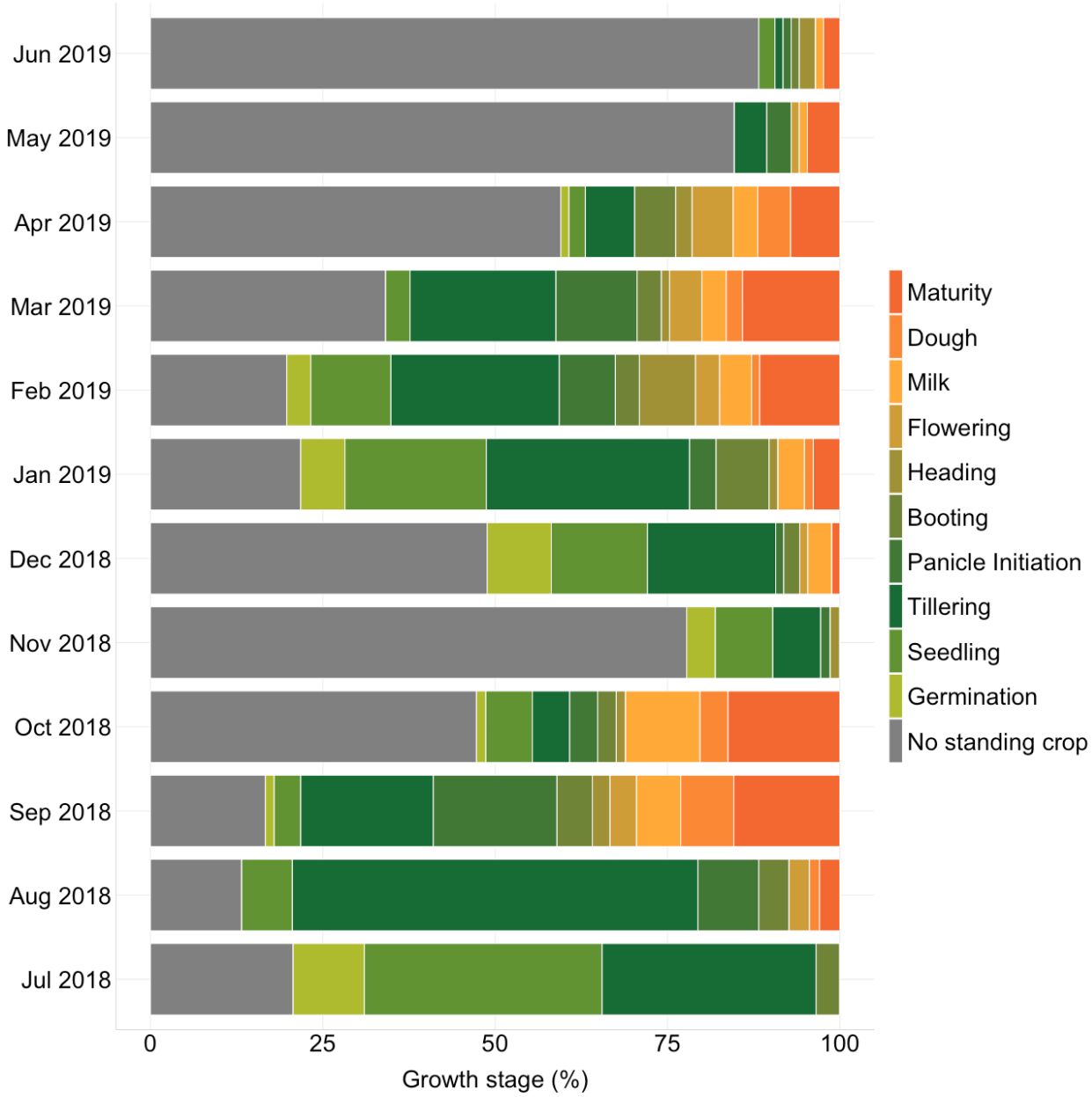

Figure 1. Proportion of crop growth stage of fields by month,

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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

The incidence of foliar diseases, except brown spot, was negligible. Brown spot was observed in all the monitored fields (Figure 2). The mean incidence ranged from 1% to 5%, but the maximum median incidence of 1% was recorded only in March and April 2019. The incidence of red stripe in Region V was higher than in the other regions during the year. The mean incidence of red stripe was higher in the first semester of 2019 (range = 1% to 4%, mean = 2%) than in the second semester of 2018 (range = 0 to 1%, mean = 0.5%).

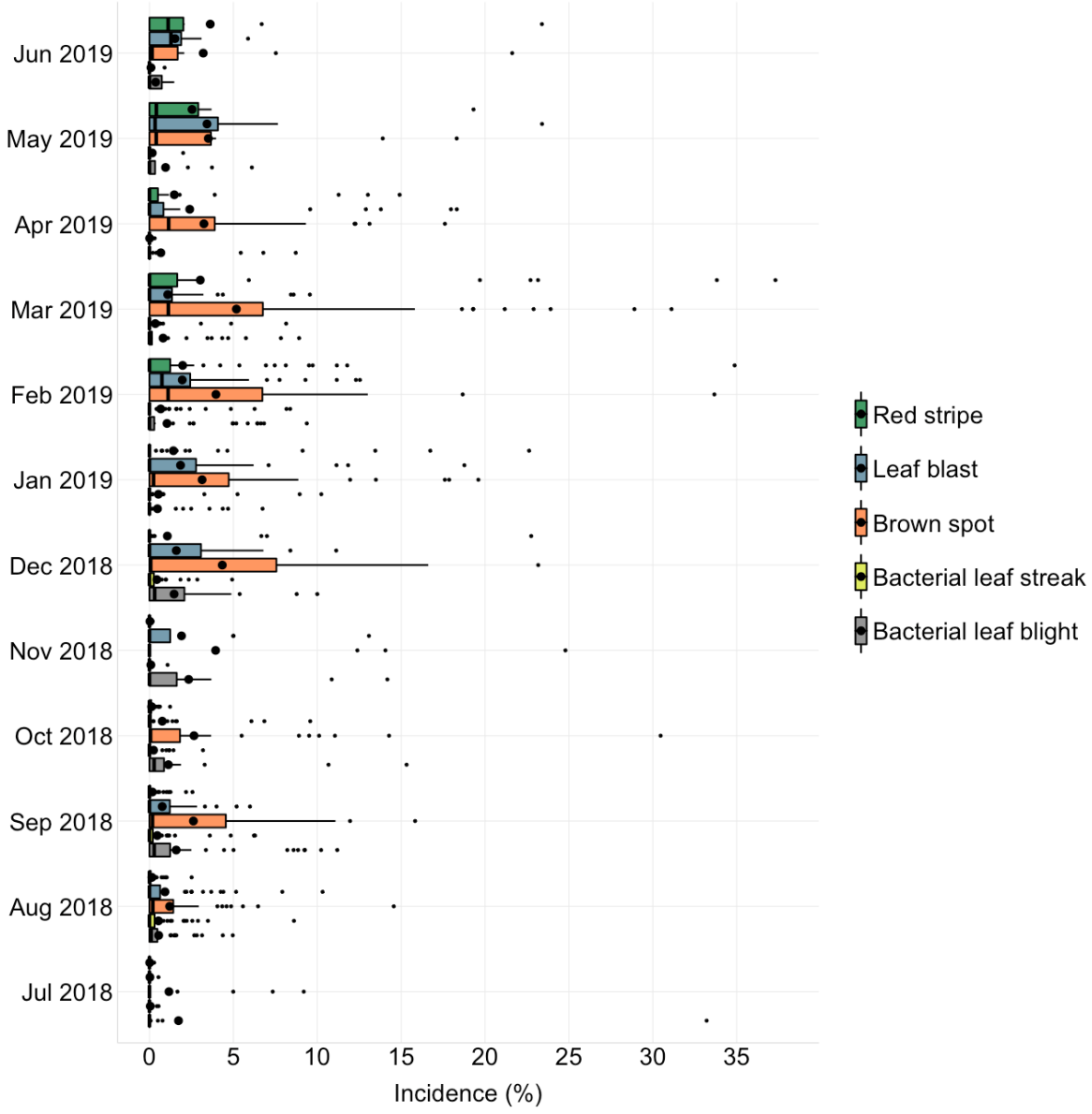

Figure 2. Incidence of foliar diseases incidence in Region V, July 2018 to June 2019.

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B. Insect pest injuries and diseases on tillers

The incidence of deadheart and sheath blight during the year was negligible (Figure 4).

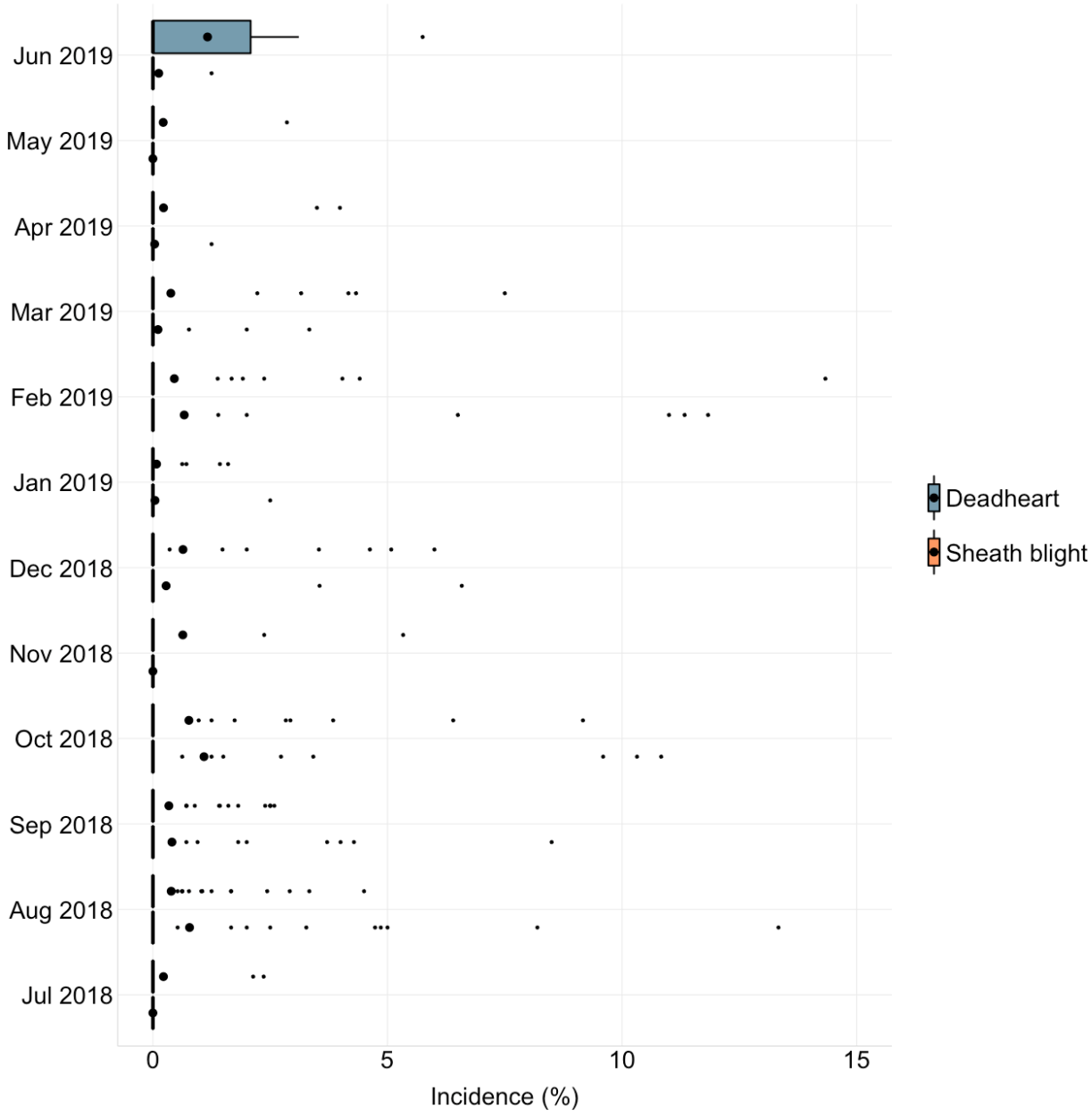

Figure 3. Incidence of deadheart and sheath blight in Region V, July 2018 to June 2019.

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C. Insect pest injuries and diseases on panicles

The incidence of neck blast during the year was negligible (Figure 4). The incidence of whitehead was also negligible, except in October 2018, in which the mean incidence was 5%.

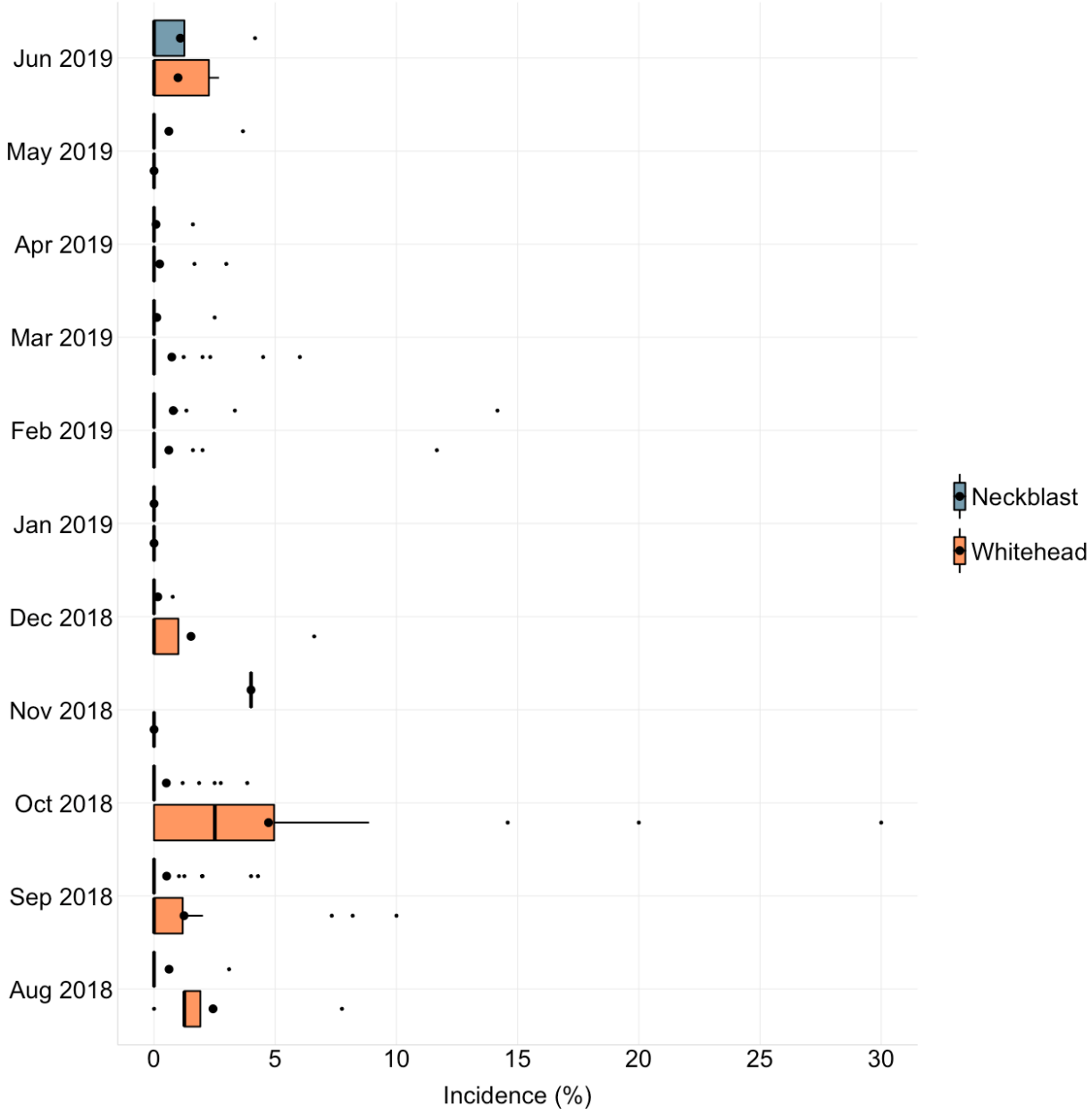

Figure 4. Incidence of neck blast and whitehead in Region V, July 2018 to June 2019.

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D. Systemic insect pest injuries and diseases

Bugburn, hopperburn and tungro were not observed during the year (Figure 5).

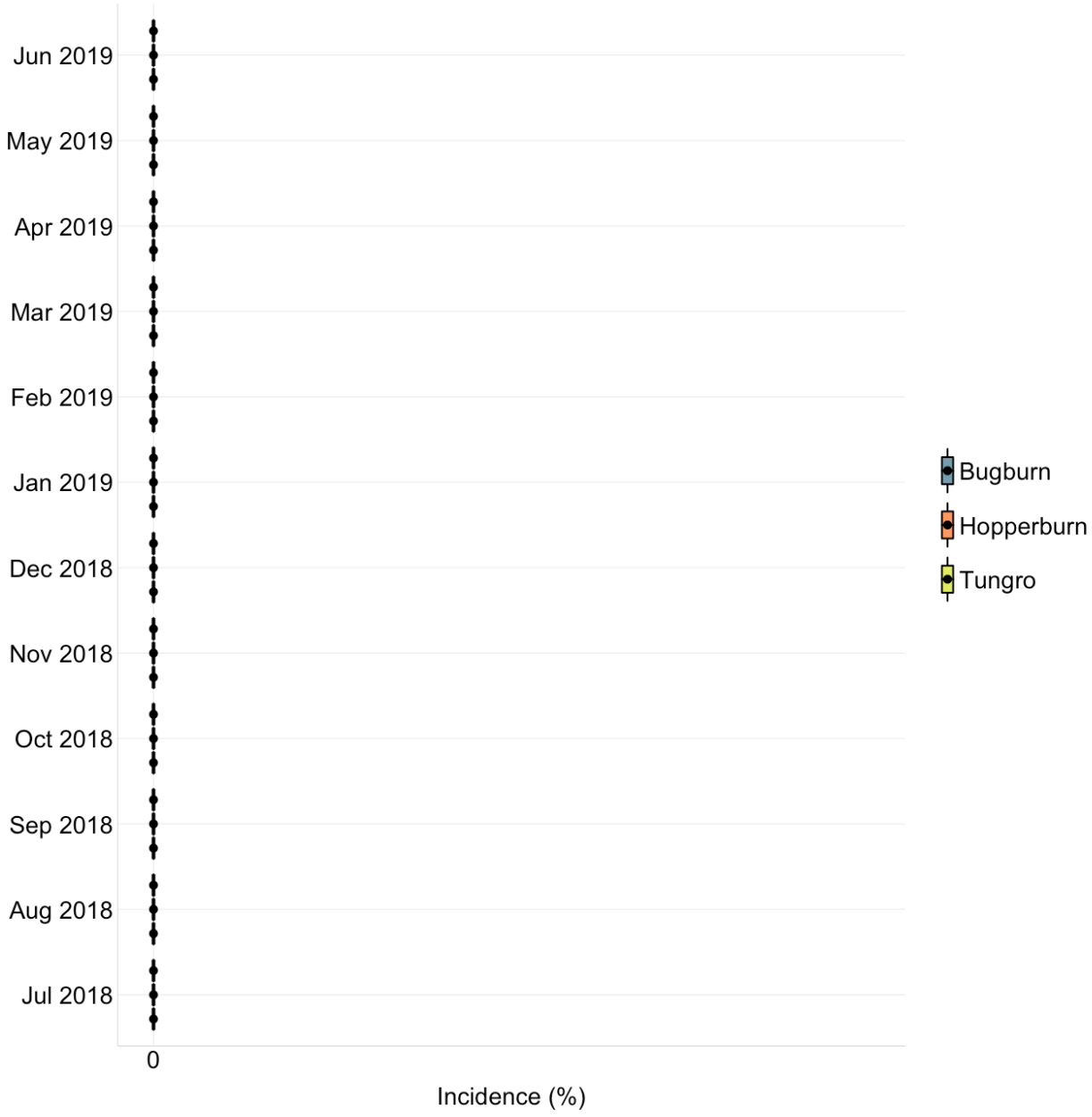

Figure 5. Incidence of bugburn, hopperburn and tungro in Region, July 2018 to June 2019

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E. Insect count

The number of brown planthopper, green leafhopper, rice black bug and rice grain bug was negligible (Figure 6). More than 10 rice bugs per square meter were observed in some fields. However, it was not observed in majority of the fields, with median count of 0 in 11 months.

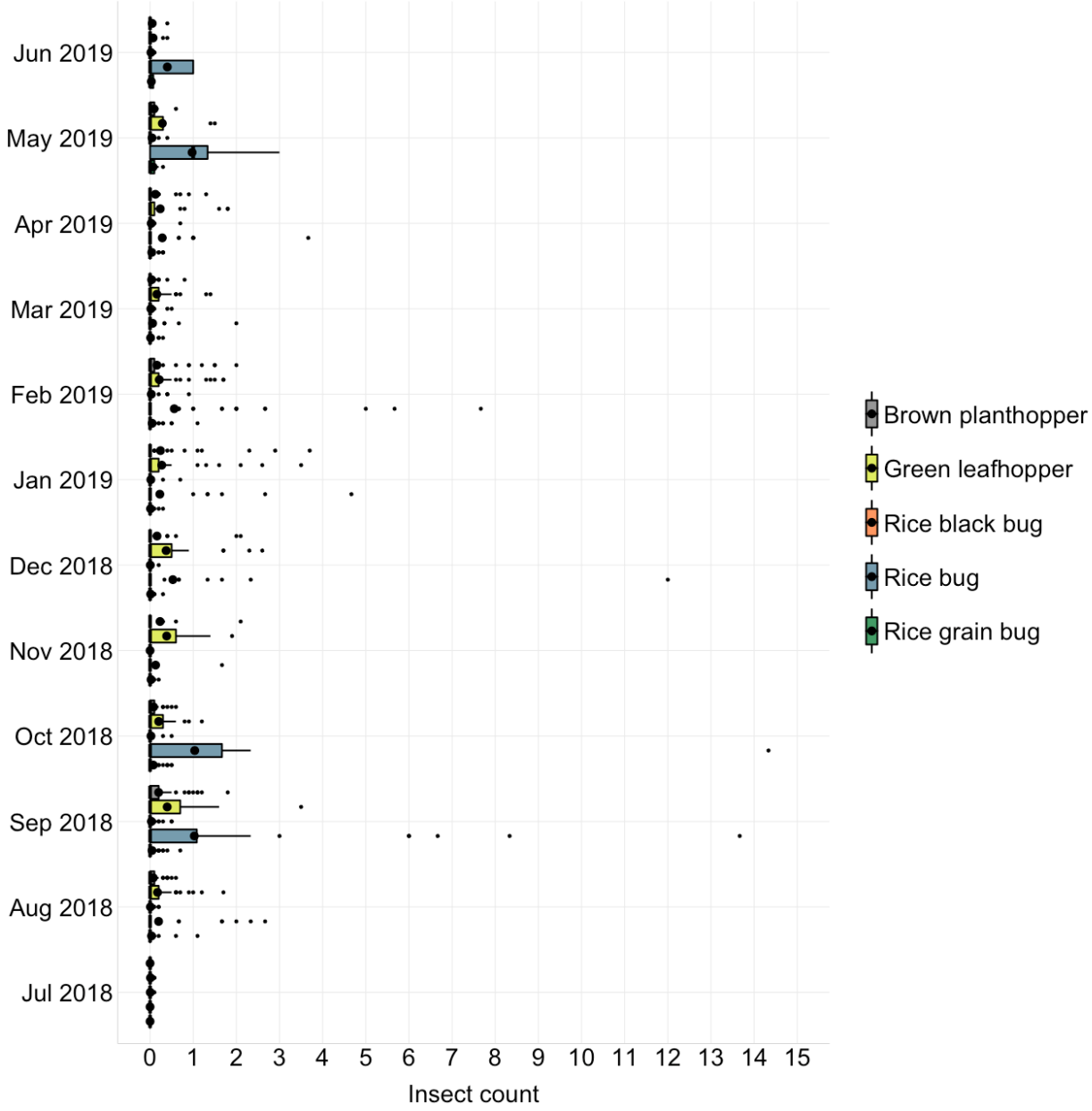

Figure 6. Count of insect pests in Region V, July 2018 to June 2019.

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F. Rat injury

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

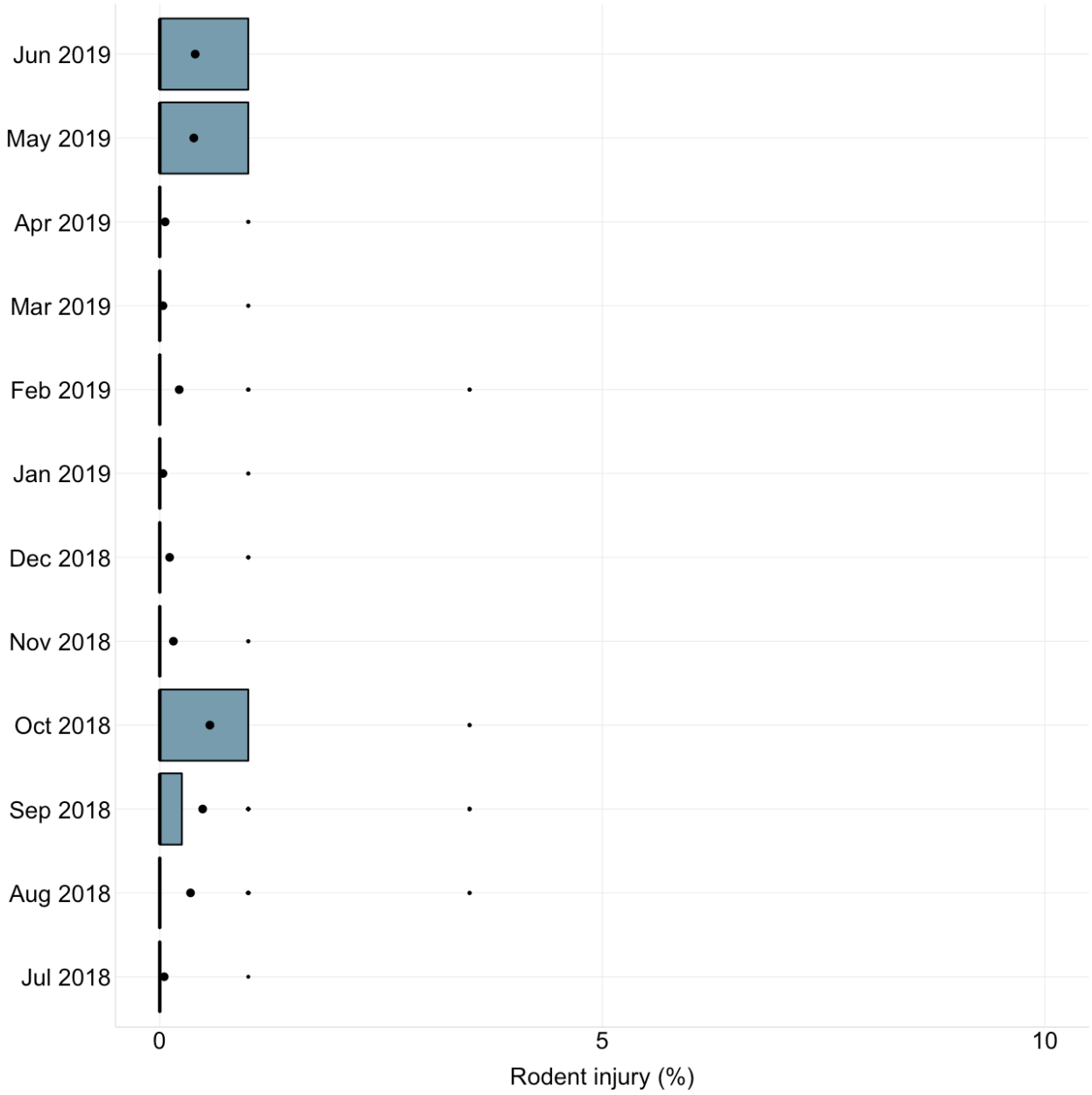

Figure 7. Incidence of rat injury in Region V, July 2018 to June 2019.

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G. Weed cover

The highest mean percentage of weed cover was observed in November 2018 (6%) and May 2019 (5%), when most of the monitored fields were fallow. The level of weed cover was negligible when fields had standing crop.

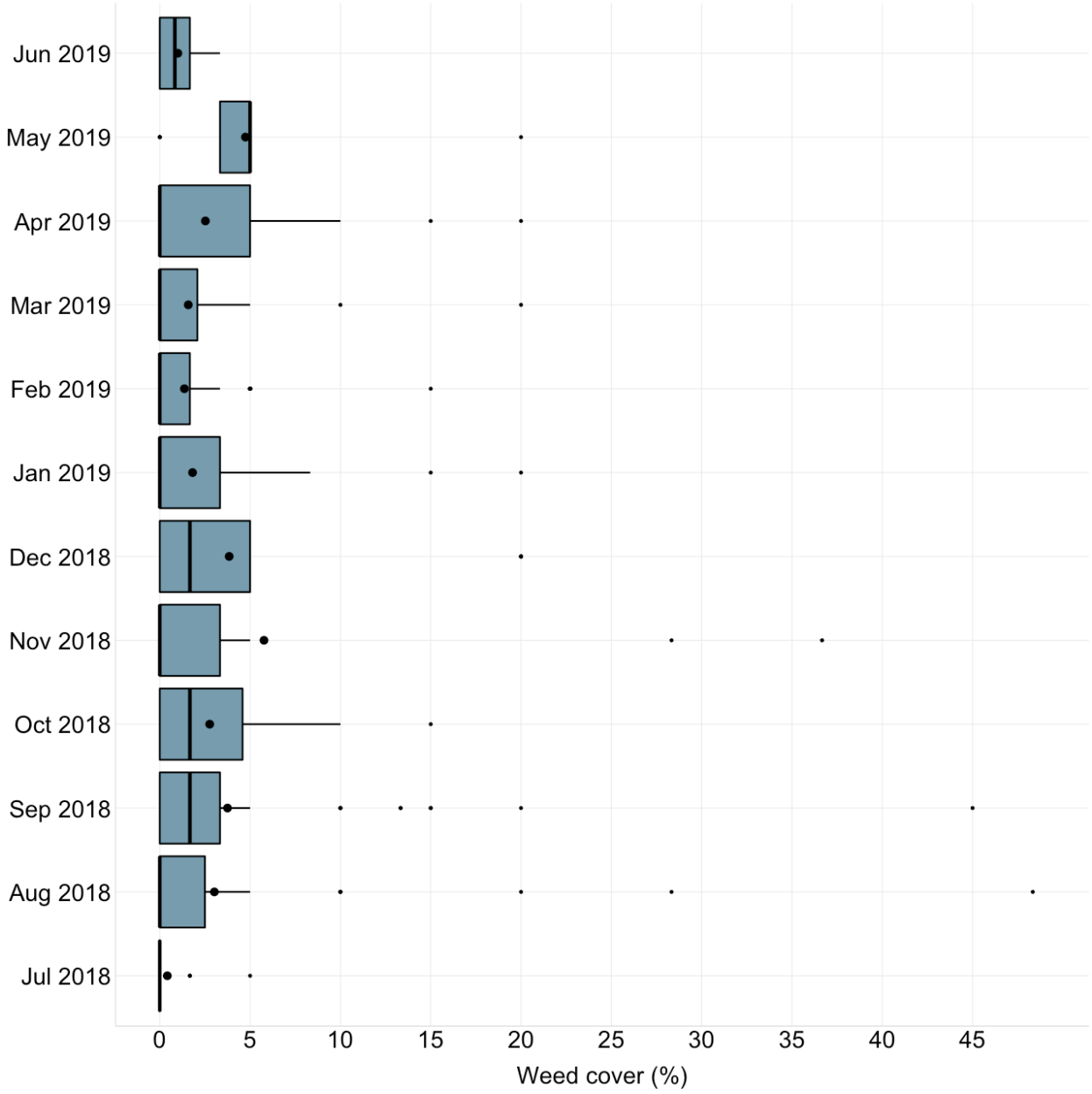

Figure 8. Percentage of weed cover in Region V, July 2018 to June 2019.

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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.

Brown spot

1. The most practical and economical approach to manage brown spot is to grow a resistant variety.
2. When feasible, improve soil fertility by regularly monitoring nutrients in the soil. and the application of required fertilizers.
3. If possible, determine the occurrence of Akiochi, a nutritional disorder, in the field. Brown spot develops on plants affected by Akiochi and has, in fact, been used as its indicator.
   It is caused by excessive concentration of hydrogen sulfide in the soil and results in reduced nutrient uptake. Akiochi occurs in irrigated fields that are poorly drained and have excessive organic matter. Low decomposition of stubbles, which usually occurs in areas with short fallow period, results in high organic matter.
4. Use certified seeds or clean seeds. Brown spot is a seedborne disease which means that growing an infected seed will result in diseased plants during the cropping season. Seeds can be cleaned manually using flotation method which consists of the following steps:
   a. Dissolve 1.5 kg salt in 40 liters of water.
   b. Soak seeds in the salt solution.
   c. Stir to float diseased, unfilled and broken seeds.
   d. Remove floating seeds by hand or with a sieve.
   e. Wash seeds 3 to 4 times with clean water.
   f. Dry in the shade thoroughly before sowing.
5. The pathogen in the seeds can be eliminated by hot water seed treatment. This treatment is not recommended if seeds had been chemically treated or primed (pre-soaked to promote germination). It consists of the following steps:
   a. Soak seeds for 1 to 3 hours in tap water.
   b. Preheat water bath. To ensure uniform temperature in the container, the amount of water should allow seeds to move freely and constantly stir the mixture. Maintain temperature by adding room temperature water.
   c. Prepare packets made of cheese cloth or nets and fill half of each packet with seeds.
   d. Transfer and soak seeds in hot water bath (52 to 57°C) for 15 mins. Put weights to keep the seeds submerged. Constantly check the temperature.
   e. Immediately remove and cool the seeds by washing with room temperature water.
   f. Spread and dry the seeds in the shade completely before sowing.

   A disadvantage of the hot water seed treatment is that it requires careful handling. However, it is more effective than fungicide treatment because fungicides may not penetrate the seed coat.

6. 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.

7. Apply potassium and other required nutrients in addition to nitrogen. Potassium reduces the amount of most rice diseases.
8. Apply calcium silicate fertilizer or silicon fertilizer before crop establishment if the soil is deficient in silicon.
9. Apply fungicides, such as azoxystrobin, ready mixture of azoxystrobin and difenoconazole, and propiconazole, as foliar spray. Seeds may also be treated with fungicides, such as carbendazin and benomyl. Use fungicides as a last resort in controlling the disease. 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 possible, irrigate the field continuously until one week before harvest. Do not drain the field for long periods because drought stress favors brown spot.
11. Remove alternate hosts in the field, such as *Echinochloa* spp. and weedy rice.
12. If harvested plants had severe disease, immediately plow or rotavate the field after harvest to incorporate infected stubbles and crop residues in the soil.
13. Dry grains immediately after harvest to moisture content of at least 14% .
14. Store grains in sealed containers with moisture content of at least 14%.

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 V

July 2018	n	min	max	Pest incidence (%) 0	<1	1-5	>5
A. FOLIAR DISEASES							
Bacterial leaf blight	20	0.00	33.21				
Bacterial leaf streak	20	0.00	0.54				
Brown spot	20	0.00	9.19				
Leaf blast	20	0.00	0.54				
Red stripe	20	0.00	0.28				
B. DISEASE OR PEST INJURY ON TILLERS							
Deadheart	20	0.00	2.36				
Sheath Blight	20	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	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	0.00				
Green Leaf Hopper	20	0.00	0.10				
Rice Black Bug	20	0.00	0.10				
Rice Bug	20	0.00	0.00				
Rice Grain Bug	20	0.00	0.00				
F. RODENT INJURY	20	0.00	1.00				
G. WEED COVER	20	0.00	5.00				

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 V

August 2018	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	58	0.00	4.97	
Bacterial leaf streak	58	0.00	8.61	
Brown spot	58	0.00	14.56	
Leaf blast	58	0.00	10.32	
Red stripe	58	0.00	2.51	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	58	0.00	4.50	
Sheath Blight	58	0.00	13.33	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	5	0.00	3.10	
Whitehead	5	0.00	7.75	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	58	0.00	0.00	
Hopperburn	58	0.00	0.00	
Tungro	58	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	58	0.00	0.60	
Green Leaf Hopper	58	0.00	1.70	
Rice Black Bug	58	0.00	0.20	
Rice Bug	58	0.00	2.67	
Rice Grain Bug	58	0.00	1.10	
F. RODENT INJURY	58	0.00	3.50	
G. WEED COVER	58	0.00	48.33	

Annex Figure 2. Incidence of pest injuries, count of insect pests, and weed cover in August 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 V

September 2018	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	63	0.00	11.19	
Bacterial leaf streak	63	0.00	6.29	
Brown spot	63	0.00	15.83	
Leaf blast	63	0.00	5.99	
Red stripe	63	0.00	2.56	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	63	0.00	2.59	
Sheath Blight	63	0.00	8.50	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	28	0.00	4.29	
Whitehead	28	0.00	10.00	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	63	0.00	0.00	
Hopperburn	63	0.00	0.00	
Tungro	63	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	63	0.00	1.80	
Green Leaf Hopper	63	0.00	3.50	
Rice Black Bug	63	0.00	0.50	
Rice Bug	63	0.00	13.67	
Rice Grain Bug	63	0.00	0.70	
F. RODENT INJURY	63	0.00	3.50	
G. WEED COVER	63	0.00	45.00	

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 V

October 2018	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	38	0.00	15.32	
Bacterial leaf streak	38	0.00	3.19	
Brown spot	38	0.00	30.47	
Leaf blast	38	0.00	9.58	
Red stripe	38	0.00	1.23	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	38	0.00	9.17	
Sheath Blight	38	0.00	10.83	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	24	0.00	3.84	
Whitehead	24	0.00	30.00	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	38	0.00	0.00	
Hopperburn	38	0.00	0.00	
Tungro	38	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	38	0.00	0.60	
Green Leaf Hopper	38	0.00	1.20	
Rice Black Bug	38	0.00	0.50	
Rice Bug	38	0.00	14.33	
Rice Grain Bug	38	0.00	0.50	
F. RODENT INJURY	38	0.00	3.50	
G. WEED COVER	38	0.00	15.00	

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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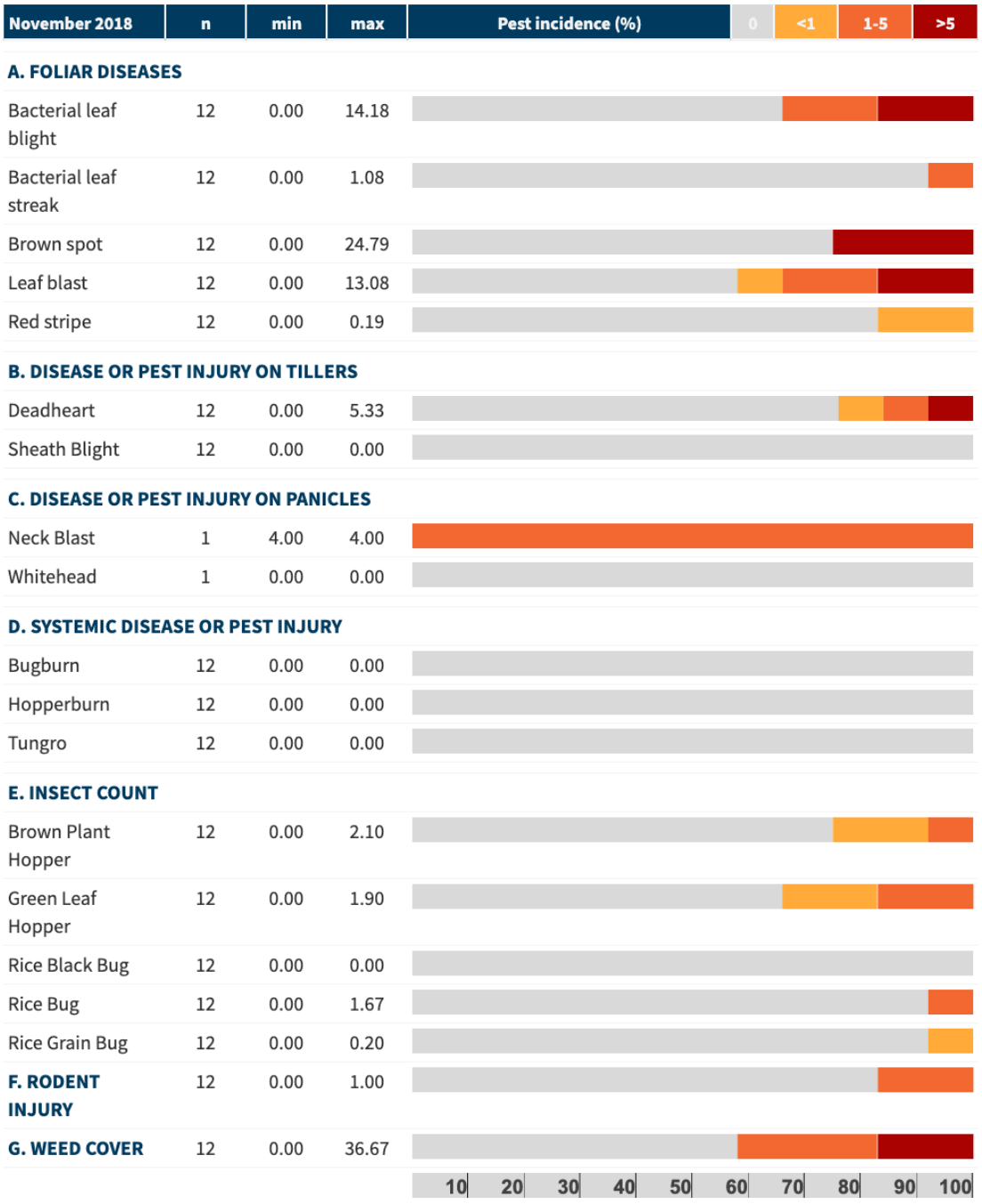
Region V



Annex Figure 5. Incidence of pest injuries, count of insect pests, and weed cover in November 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 V

December 2018	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	34	0.00	10.00	
Bacterial leaf streak	34	0.00	4.93	
Brown spot	34	0.00	23.17	
Leaf blast	34	0.00	11.13	
Red stripe	34	0.00	22.75	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	34	0.00	6.00	
Sheath Blight	34	0.00	6.58	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	5	0.00	0.77	
Whitehead	5	0.00	6.61	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	34	0.00	0.00	
Hopperburn	34	0.00	0.00	
Tungro	34	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	34	0.00	2.10	
Green Leaf Hopper	34	0.00	2.60	
Rice Black Bug	34	0.00	0.20	
Rice Bug	34	0.00	12.00	
Rice Grain Bug	34	0.00	0.30	
F. RODENT INJURY	34	0.00	1.00	
G. WEED COVER	34	0.00	20.00	

Annex Figure 6. 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 V

January 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	55	0.00	6.74	
Bacterial leaf streak	55	0.00	10.24	
Brown spot	55	0.00	19.60	
Leaf blast	55	0.00	18.77	
Red stripe	55	0.00	22.63	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	55	0.00	1.60	
Sheath Blight	55	0.00	2.50	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	7	0.00	0.00	
Whitehead	7	0.00	0.00	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	55	0.00	0.00	
Hopperburn	55	0.00	0.00	
Tungro	55	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	55	0.00	3.70	
Green Leaf Hopper	55	0.00	3.50	
Rice Black Bug	55	0.00	0.30	
Rice Bug	55	0.00	4.67	
Rice Grain Bug	55	0.00	0.30	
F. RODENT INJURY	55	0.00	1.00	
G. WEED COVER	55	0.00	20.00	

Annex Figure 7. 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.

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Region V

February 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	66	0.00	9.38	
Bacterial leaf streak	66	0.00	8.38	
Brown spot	66	0.00	33.67	
Leaf blast	66	0.00	12.54	
Red stripe	66	0.00	34.88	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	66	0.00	14.33	
Sheath Blight	66	0.00	11.83	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	25	0.00	14.17	
Whitehead	25	0.00	11.67	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	66	0.00	0.00	
Hopperburn	66	0.00	0.00	
Tungro	66	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	66	0.00	2.00	
Green Leaf Hopper	66	0.00	1.70	
Rice Black Bug	66	0.00	0.90	
Rice Bug	66	0.00	7.67	
Rice Grain Bug	66	0.00	1.10	
F. RODENT INJURY	66	0.00	3.50	
G. WEED COVER	66	0.00	15.00	

Annex Figure 8. 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 V

March 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	56	0.00	8.92	
Bacterial leaf streak	56	0.00	8.14	
Brown spot	56	0.00	31.11	
Leaf blast	56	0.00	9.56	
Red stripe	56	0.00	37.31	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	56	0.00	7.50	
Sheath Blight	56	0.00	3.33	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	22	0.00	2.50	
Whitehead	22	0.00	6.01	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	56	0.00	0.00	
Hopperburn	56	0.00	0.00	
Tungro	56	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	56	0.00	0.80	
Green Leaf Hopper	56	0.00	1.40	
Rice Black Bug	56	0.00	0.50	
Rice Bug	56	0.00	2.00	
Rice Grain Bug	56	0.00	0.30	
F. RODENT INJURY	56	0.00	1.00	
G. WEED COVER	56	0.00	20.00	

Annex Figure 9. 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 V

April 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	32	0.00	8.72	
Bacterial leaf streak	32	0.00	0.31	
Brown spot	32	0.00	17.61	
Leaf blast	32	0.00	18.32	
Red stripe	32	0.00	14.91	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	32	0.00	3.99	
Sheath Blight	32	0.00	1.25	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	19	0.00	1.60	
Whitehead	19	0.00	2.98	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	32	0.00	0.00	
Hopperburn	32	0.00	0.00	
Tungro	32	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	32	0.00	1.30	
Green Leaf Hopper	32	0.00	1.80	
Rice Black Bug	32	0.00	0.70	
Rice Bug	32	0.00	3.67	
Rice Grain Bug	32	0.00	0.30	
F. RODENT INJURY	32	0.00	1.00	
G. WEED COVER	32	0.00	20.00	

Annex Figure 10. 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 V

May 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	13	0.00	6.10	
Bacterial leaf streak	13	0.00	2.00	
Brown spot	13	0.00	18.31	
Leaf blast	13	0.00	23.40	
Red stripe	13	0.00	19.31	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	13	0.00	2.86	
Sheath Blight	13	0.00	0.00	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	6	0.00	3.67	
Whitehead	6	0.00	0.00	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	13	0.00	0.00	
Hopperburn	13	0.00	0.00	
Tungro	13	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	13	0.00	0.60	
Green Leaf Hopper	13	0.00	1.50	
Rice Black Bug	13	0.00	0.40	
Rice Bug	13	0.00	3.00	
Rice Grain Bug	13	0.00	0.30	
F. RODENT INJURY	13	0.00	1.00	
G. WEED COVER	13	0.00	20.00	

Annex Figure 11. 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.

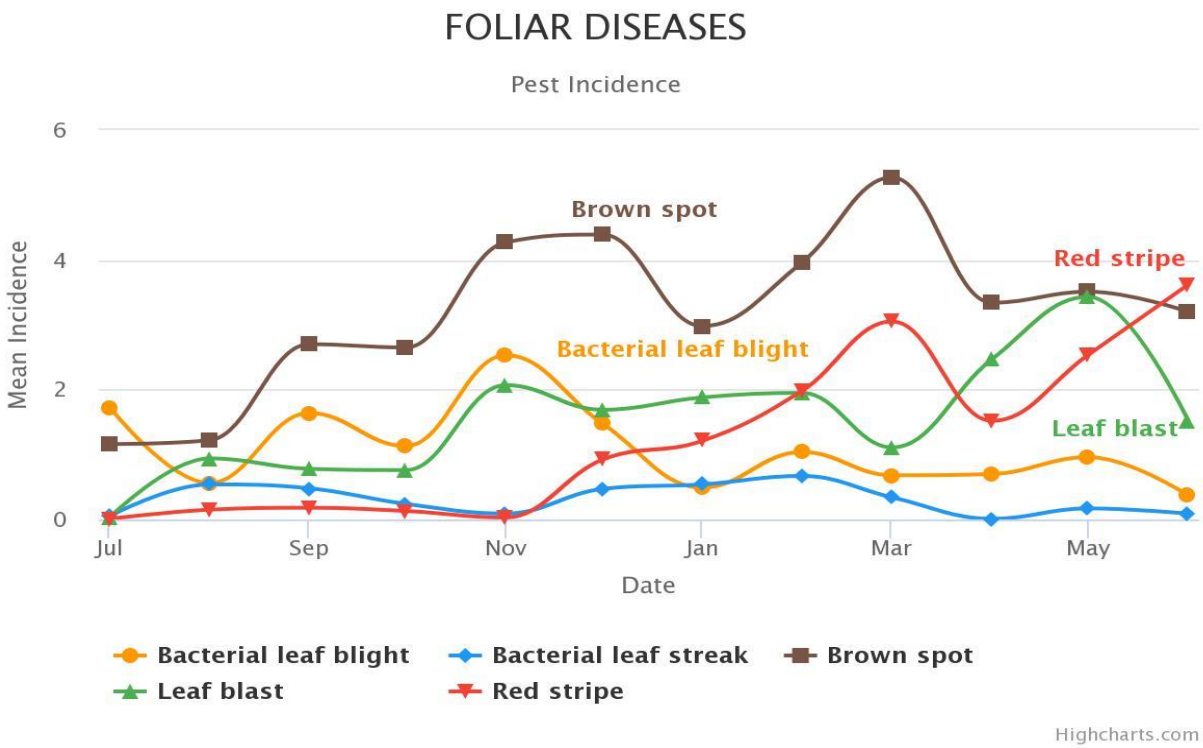
Disclaimer: All the data presented in this report are based on the monthly monitoring of farmers' fields by regional data collectors of PRIME.

Region V

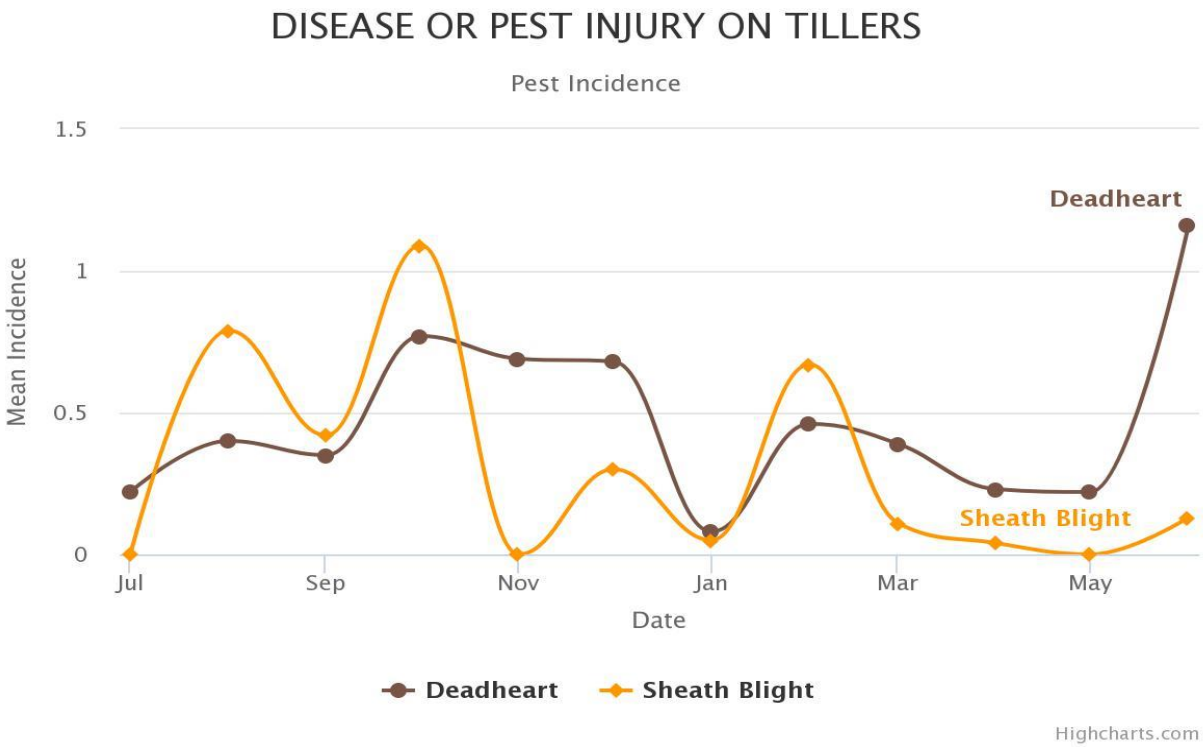
June 2019	n	min	max	Pest incidence (%) 0 <1 1-5 >5
A. FOLIAR DISEASES				
Bacterial leaf blight	10	0.00	1.48	
Bacterial leaf streak	10	0.00	0.90	
Brown spot	10	0.00	21.62	
Leaf blast	10	0.00	5.88	
Red stripe	10	0.00	23.39	
B. DISEASE OR PEST INJURY ON TILLERS				
Deadheart	10	0.00	5.75	
Sheath Blight	10	0.00	1.25	
C. DISEASE OR PEST INJURY ON PANICLES				
Neck Blast	5	0.00	4.17	
Whitehead	5	0.00	2.68	
D. SYSTEMIC DISEASE OR PEST INJURY				
Bugburn	10	0.00	0.00	
Hopperburn	10	0.00	0.00	
Tungro	10	0.00	0.00	
E. INSECT COUNT				
Brown Plant Hopper	10	0.00	0.40	
Green Leaf Hopper	10	0.00	0.40	
Rice Black Bug	10	0.00	0.10	
Rice Bug	10	0.00	1.00	
Rice Grain Bug	10	0.00	0.10	
F. RODENT INJURY	10	0.00	1.00	
G. WEED COVER	10	0.00	3.33	
				10 20 30 40 50 60 70 80 90 100

Annex Figure 12. 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.

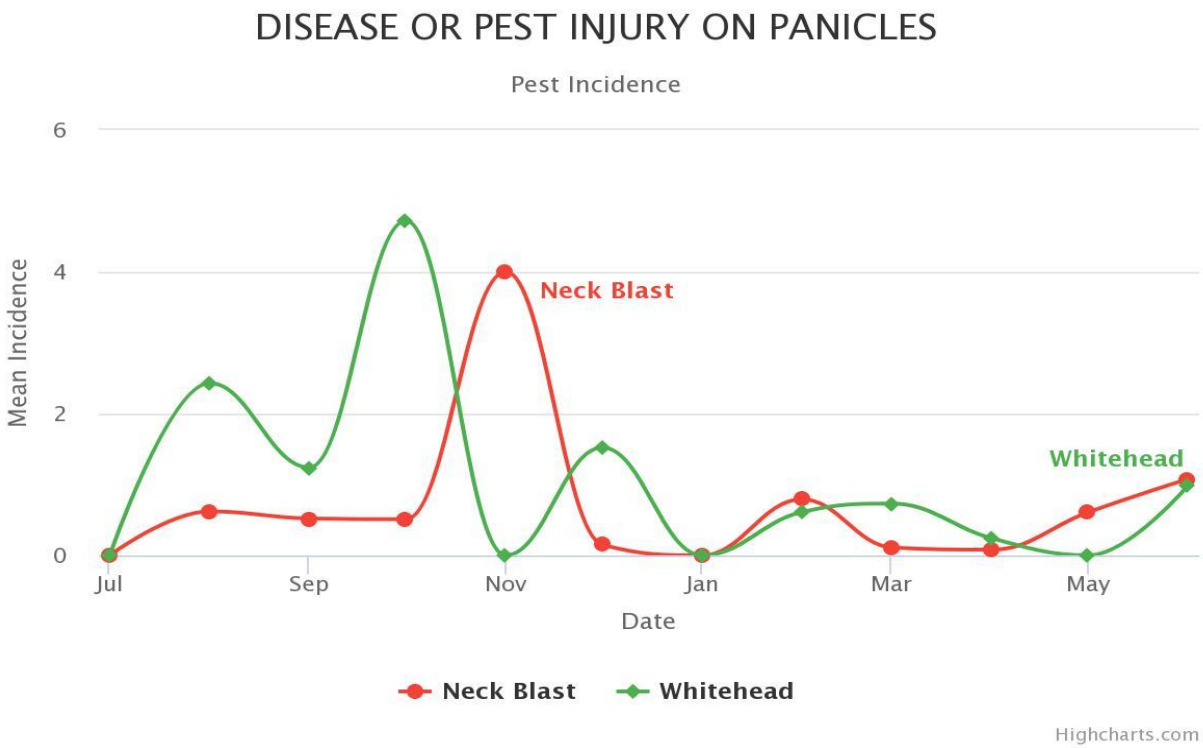


Annex Figure 13. Mean incidence of foliar diseases in Region V, July 2018 to June 2019.

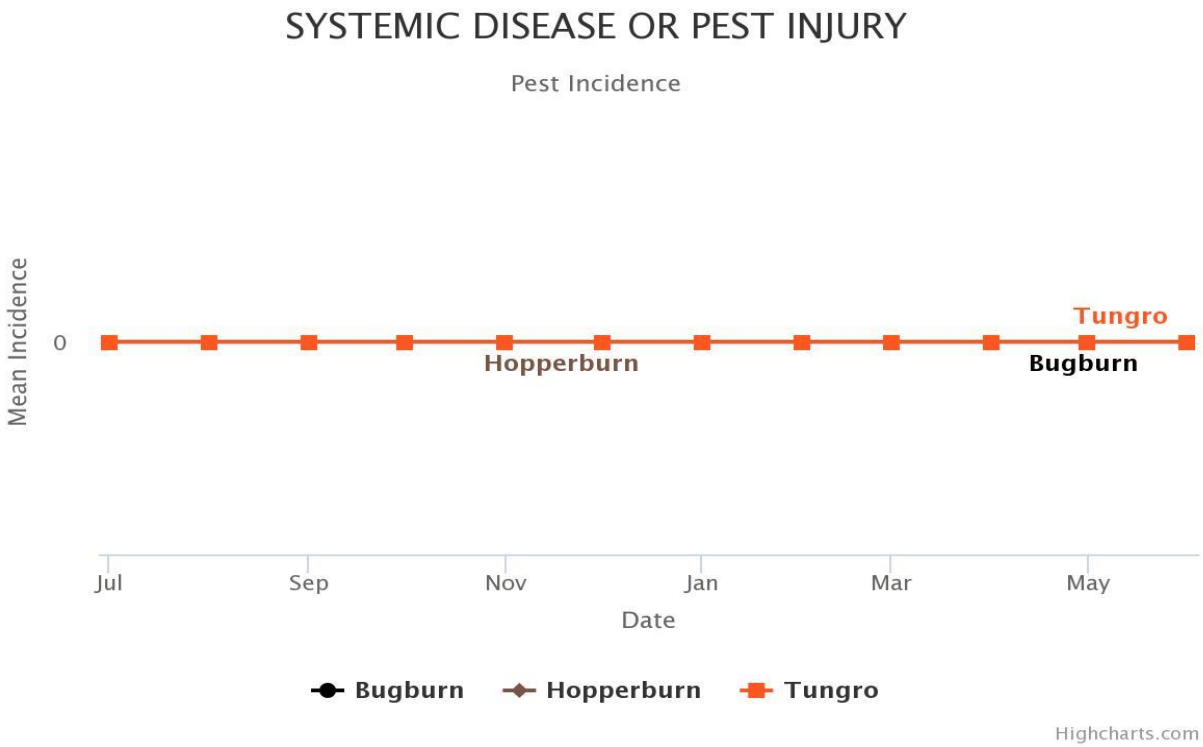


Annex Figure 14. Mean Incidence of deadheart and sheath blight in Region V, July 2018 to June 2019.

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

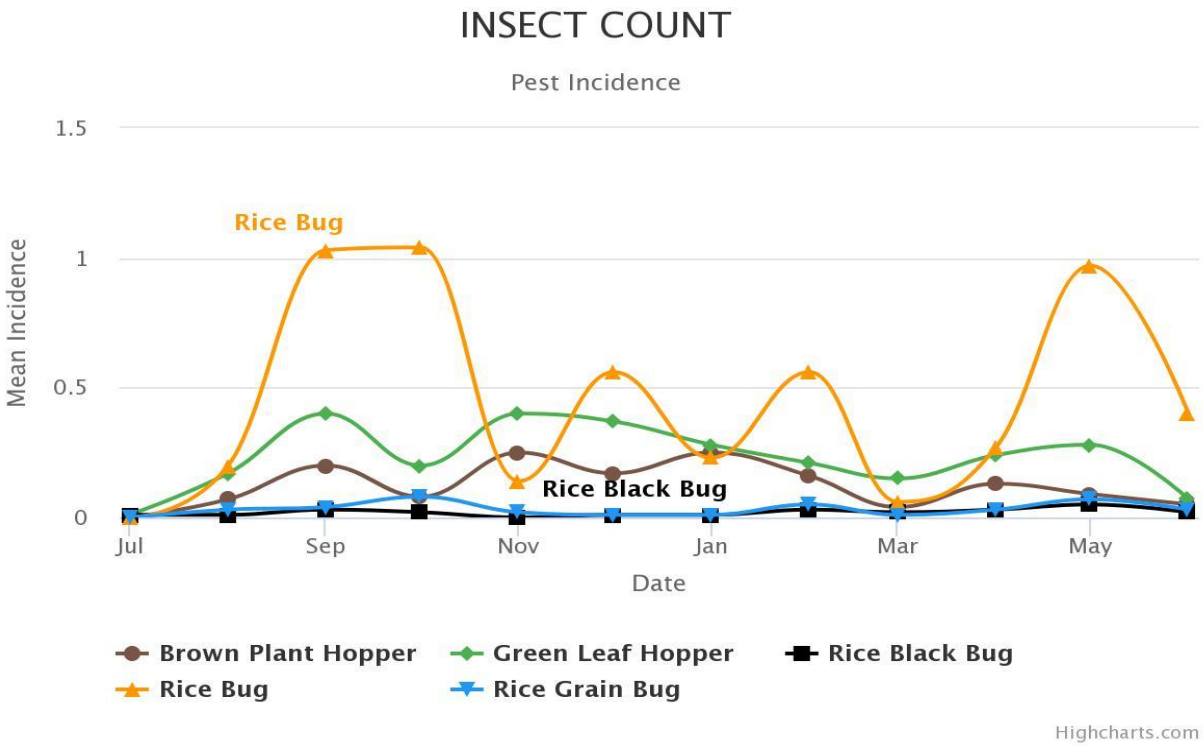


Annex Figure 15. Mean incidence of neck blast and whitehead in Region V, July 2018 to June 2019.

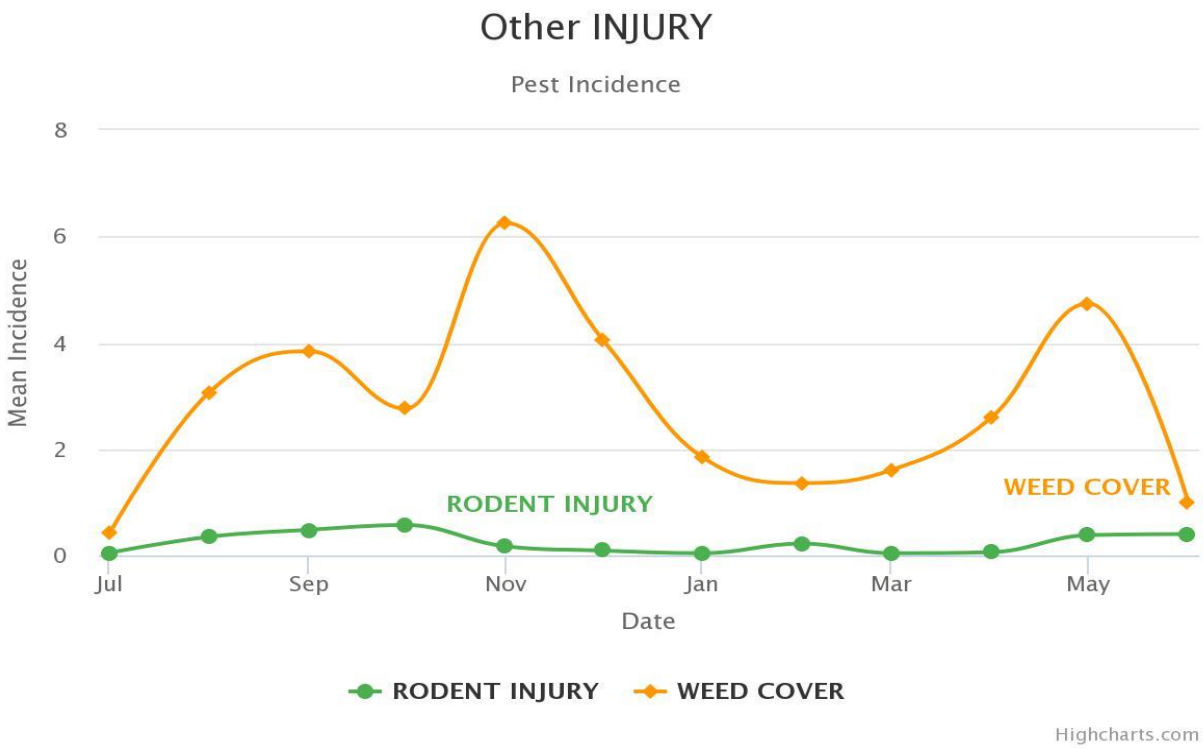


Annex Figure 16. Mean incidence of bugburn, hopperburn and tungro in Region V, July 2018 to June 2019.

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 count of insect pests in Region V, July 2018 to June 2019.



Annex Figure 18. Mean incidence of rat injury and weed infestation in Region V, 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.