

Jenis-Jenis Hama Padi (*Oryza Sativa L*) Pada Persawahan Kecamatan Tebat Karai Kabupaten Kepahiang

Types Of Rice Pests (*Oryza Sativa L*) In Rice Fields In Tebat Karai District, Kepahiang Regency

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui jenis-jenis hama pada tanaman padi di Kecamatan Tebat Karai Kabupaten Kepahiang. Metode penelitian ini menggunakan metode survey langsung ke lapangan serta menggunakan metode jelajah dalam pengambilan sampel. eksperimen semu (quasi exsperiment), dengan pendekatan kuantitatif serta menggunakan pretest– posttest non equivalent control group design. Hasil penelitian menunjukkan bahwa sebanyak 10 famili dan 11 spesies, yaitu famili *Estrilidae* 1 spesies (*Lonchura maja*) sebanyak 32 ekor, famili *Prygomorphidae* 1 spesies (*Atractomorpha arenulata*) sebanyak 20 ekor, famili *Gryllidae* 1 spesies (*Grillis bimaculatus*) sebanyak 5 ekor, famili *Coreidae* 1 spesies (*Anoplocnemis phasiana*) sebanyak 5 ekor, famili *Acrididae* 2 spesies (*Locusta migratoria*, *Oxya chinensis*) sebanyak 15 ekor, famili *Pentatimidae* 1 spesies (*Podium nigrispinus*) sebanyak 7 ekor, famili *Allydidae* 1 spesies (*Loptocorisa acuta*) sebanyak 7 ekor, dan famili *Ampullariidae* 1 spesies (*Pila ampullacea*) sebanyak 45 ekor. *Oxya chinensis* (*Belalang hijau*) sebanyak 33 ekor. Faktor ekologi di persawahan di Kecamatan Tebat Karai Kabupaten Kepahiang dengan suhu udar berkisar antara 25 °C sampai 27 °C, kelembapan berkisar antara 70% sampai 85%, dan Ph tanah berkisar antara 5,0 sampai 6,1.

ABSTRACT

This study aims to determine the types of pests in rice plants in Tebat Karai District, Kepahiang Regency. This research method uses a direct survey method to the field and uses an exploration method in sampling. quasi-experiment, with a quantitative approach and using a pretest-posttest non-equivalent control group design. The results of the study showed that there were 10 families and 11 species, namely the *Estrilidae* family 1 species (*Lonchura maja*) as many as 32 individuals, the *Prygomorphidae* family 1 species (*Atractomorpha arenulata*) as many as 20 individuals, the *Gryllidae* family 1 species (*Grillis bimaculatus*) as many as 5 individuals, the *Coreidae* family 1 species (*Anoplocnemis phasiana*) as many as 5 individuals, the *Acrididae* family 2 species (*Locusta migratoria*, *Oxya chinensis*) as many as 15 individuals, the *Pentatimidae* family 1 species (*Podium nigrispinus*) as many as 7 individuals, the *Allydidae* family 1 species (*Loptocorisa acuta*) as many as 7 individuals, and the *Ampullariidae* family 1 species (*Pila ampullacea*) as many as 45 individuals. *Oxya chinensis* (*Green grasshopper*) as many as 33 individuals. Ecological factors in rice fields in Tebat Karai District, Kepahiang Regency with air temperatures ranging from 25 °C to 27 °C, humidity ranging from 70% to 85%, and soil pH ranging from 5.0 to 6.1.

INTRODUCTION

Indonesia is a country that has abundant natural wealth, both flora and fauna. One of these flora riches is rice plants. In general, many people already know that rice plants will produce rice which will later be processed into rice and used as a source of energy for the human body. Rice, which has long been a staple food source, is very difficult to replace by other staple foods such as sago, tubers, corn, and other carbohydrate sources. Donggulo (2017) the existence of rice is a top priority for the community in meeting the need for filling carbohydrates, rice as a food crop is consumed by approximately 90% of the total population of Indonesia for daily staple food. In Indonesia itself, which has fertile and extensive land, rice is widely planted in large areas which are usually called rice fields. The agricultural sector plays an important role not only for the food needs of the community but also contributes to the country's foreign exchange income because it is used as a source of income and provides jobs for approximately 21 million agricultural households. Not only that, rice is the most diplomatic political commodity, to the point that rice production in the country is used as a benchmark for the availability of food for Indonesia. Lack of food sources can cause economic, social, and political threats that can disrupt national stability (Suryana, 2002). Rice plants (*Oryza sativa* L) are the number one staple food in Indonesia, where almost 90% of Indonesian people consume processed rice products (*Oryza sativa* L) in the form of rice. According to BPS data (2011), rice consumption in 2011 reached 139 kg per capita-1 year-1 with a population of 237 million people, so that national rice consumption in 2011 reached 34 million tons. The need for rice continues to increase along with the population growth rate which is faster than the growth of available food production (Anggara, 2011). However, in efforts to increase rice production (*Oryza sativa* L), various obstacles were found, namely pest attacks. There are several factors that may be the cause of the decline in farmer harvest productivity. The possibility that occurs is that farmers do not implement the latest technology recommended by the government, so that the maximum rice harvest results decrease due to the emergence of pests, and the rice field soil changes or is less healthy (Purwantoro, 2008). Pests are one of the obstacles in maintaining and increasing food production in Indonesia, especially rice fields (Ariyane et al., 2011). Where the average loss of yield in rice plants due to pest attacks is approximately 30% and the loss of yield due to pests is around 20-25% each year (Paracaya, 2008). Pests are animals that can damage plants directly or indirectly. Pests that damage plants directly can be seen by their traces, such as movement and bites. While pests that damage plants indirectly are usually through disease (Benny, 2013). Therefore, rice plant pests are an important thing that is always discussed in agricultural cultivation, including rice farmers, this is because pests are considered enemies of farmers in obtaining rice production (Yanuari, 2016). The brown planthopper pests that occur in the vegetative phase of rice cultivation are higher than those in the generative phase. Because these pests attack the young stems of rice plants, causing symptoms of yellowing leaves due to disturbed rice stems. Meanwhile, brown planthopper and ladybug attacks occur in generative phase rice plants, because these pests attack rice grains that are still ripe by sucking the liquid in the rice, causing the rice plant grains to become empty. Manueke (2017) Almost every season there is an explosion of pests in rice (*Oryza sativa* L) plantations, including stem borers (*Sesamia inferens*, *Chilo* spp., *Scirpophaga incertulas*), white pests (*Nymphula depunctalis*), planthoppers (*Nephotettix virescens* and *Nilaparvata lugens*), stink bugs (*Leptocoris acuta*), black ladybugs (*Pareaucosmetus* sp.), golden snails (*Pomacea caniculata*), bird pests (*Passer* spp.), and rat pests (*Ratus-ratus* spp.).

Pest attacks on rice plants, both directly and indirectly, can cause a significant decrease in production. The emergence of pest attacks on rice plants influences farmers to control plant pests, especially insect pests, using insecticides. In preventing these insects, farmers use insecticides unwisely, where this action can result in the killing of natural enemies of pests, both predators, parasitoids, and pathogens found in the rice field area. The death of natural enemies of these pests can cause resistance, resurgence, and explosions of second pests/secondary pests (Sarumaha, 2020). Based on a direct survey that has been carried out in the rice field area of \pm 120 Ha as a whole with different location points. In the rice field area in Tebat Karai sub-district, there are several species of rice pests that attack rice plants in the rice field area. Pests found such as golden snails are found in rice fields with an age of 1 week, while grasshoppers are found at the beginning of rice seeds, brown planthoppers are found at the age of 2 weeks, golden snail eggs are still in the rice stems that are 1 month old, false whites that attack 1 month old rice. These pests are known by the community to interfere with the growth, development and production of rice plants produced. In Tebat Karai District, Kepahiang Regency, pests on rice plants have not been able to be overcome until now, pests in rice plants have not been completely eradicated using chemical pesticides. Based on information from farmers, pests that often attack rice plants on the stems, leaves, and rice fruits, resulting in losses and reducing the quality of rice, this is very much complained about by farmers. Overall, information about the types of pests in the rice field area of Kepahiang District, Kepahiang Regency has not been reported completely, so researchers are interested in conducting research on the types of hana (*Oryza sativa* L) in rice fields in Tebat Karai District, Kepahiang Regency.

Identification of types of pests in rice fields in Tebat Karai District, Kepahiang Regency is very important. This is because identifying types of pests can help farmers take appropriate and effective pest control measures so as to reduce losses caused by pest attacks. In addition, identification of types of pests can also help in the development of better and more effective pest control technology.

LITERATURE REVIEW

Research by Saragih, et al. (2018) on the types of pests in rice plants in Karang Rejo Village, Ponorogo Regency, showed that the main pests that attack rice plants are planthoppers and armyworms. Planthoppers cause chlorosis in leaves and damage the tips of plants, while armyworms can damage rice panicles. Research by Al-Taweel, et al. (2020) in Misan Province, Iraq, found that the main types of pests in rice fields in the area are grasshoppers, stem borers, and brown planthoppers. Grasshoppers cause damage to stems and leaves, while stem borers damage the inside of the stem and brown planthoppers damage leaves and stems. Research by Triwidodo, et al. (2019) in Kepunduan Village, Badung Regency, Bali, showed that the main pests in rice plants in the area are planthoppers, stem borers, and grasshoppers. Planthoppers and stem borers damage rice stems, while grasshoppers damage leaves. Research by Saputro, et al. (2021) in Pogung Village, Sleman Regency, Yogyakarta, found that the main pests of rice plants in the area were brown planthoppers and armyworms. Brown planthoppers cause chlorosis and damage stems, while armyworms damage the tips of plants and rice panicles. Research by Sarwono, et al. (2018) in Boyolali Regency, Central Java, showed that the main pests of rice fields in the area were planthoppers, armyworms, and stem borers. Planthoppers and armyworms damage leaves and the tips of plants, while stem borers damage the inside of the stem.

METHODS

Analysis Method

This study uses a direct survey method to the research location in the rice field area with different ages in Tebat Karai District, Kepahiang Regency. Sampling was carried out using the exploration method, namely by exploring the research location in the rice field area located in Tertik Village in Tebat Karai District, Kepahiang Regency with an area of approximately 2 hectares while catching insect pests found. Pest collection was carried out based on the active time of the pest at the time (morning, afternoon and evening). Morning starting at 07.00 WIB - 9.00 WIB, afternoon starting at 10.00 WIB 12.00 WIB and afternoon at 15.00 WIB-17.00 WIB. (Putra et al., 2018). This study uses a direct survey method to the research location in the rice field area with different ages in Tebat Karai District, Kepahiang Regency, sampling was carried out using the exploration method at different locations at the location of the village of Tertik, the age of rice 0-1 months with an area of ± 3 Ha, the age of rice 2 months in the village of Paduan Binjai with an area of ± 4 Ha, and at 3 months in Taba le Pauh Village (until harvest) which has a location area of ± 3 Ha.

Work procedures

1. Field

Sampling steps:

- Determine the specified research location.
- Sampling starts in the morning 08.00-17.00 WIB
- Measuring soil temperature and humidity
- Samples were taken by exploring the rice fields that had been created, the samples that had been obtained were put in jars.
- For stem caterpillar pests, they are immediately removed using tweezers and placed in plastic.
- For leaf roller pests, it is easy to do, by cutting the leaves and removing the pests to put them in plastic.
- All pests obtained from the research location will be studied according to their type and size to be preserved dry and wet with formalin.

2. Measuring ecological factors

- Air temperature and humidity
- Measurement of air temperature and humidity is carried out using a thermohygrometer, the method is to stick it in the middle of the rice field and then hang the thermohygrometer on wood that has been stuck in the middle of the rice field, wait for 5 minutes, then record the results.
- Soil pH and soil moisture
- Measuring soil pH and air humidity is done using a soil tester. The method is to stick the soiltester into the soil, wait for 5 minutes, then record the results.

3. In the Laboratory

After all samples were collected, rice pest identification was carried out. Samples were collected from the field in the UMB laboratory. In identifying insects, we refer to the key book for determining canisius pests (19991).

4. How to Make Pest Preservation

Making rice pest preservation

- Insects or pests caught
- For soft-bodied insects, the way to kill them is by pressing or pinching both sides of the chest using the thumb and index finger, being careful not to damage the insect's body.
- For hard-shelled insects, the way to kill them is by using a killer poison, namely alcohol.
- Pests or insects that have been killed are then stored in plastic or jars.
- The needle is inserted into the insect's back behind the second pair of legs or middle legs. The needle must be inserted carefully and straight with the insect's body.
- For straight-winged insects such as grasshoppers, the stinger is inserted at the back of the head, while for flat-winged insects such as beetles, the stinger is inserted near the base of the wing.
- Pest insects measuring less than ½ cm are attached to thick paper or paper with glue.
- The pests that have been stabbed are stuck into the spanblock, making sure that the base of the insect's wings is at the same height as the surface of the spanning board.
- Then the antennae or feelers are arranged as if they were alive, that is, facing forward, while the legs are facing back and the middle is directed backwards and then held with a needle that is stuck around the legs.
- After being arranged, it is then dried so that it does not rot and does not easily grow mold.
- Dried or preserved pests must be stored and managed properly, make a thin board measuring 50 cm long, 40 cm wide, 5 cm high, and cover it with styrofoam and give it the species name.
- The lime is given in each collection box season so that pests are not easily attacked by ants, which can damage the preservation, then covered using plastic or glass. The preserved pests are put into a jar containing 70% alcohol.

RESULTS AND DISCUSSION

Results

The results of the study showed that there were 10 families and 11 species, namely the *Estrildidae* family 1 species (*Lonchura maja*) as many as 32 individuals , the *Prygomorphidae* family 1 species (*Atractomorpha arenulata*) as many as 20 individuals , the *Gryllidae* family 1 species (*Grillis bimaculatus*) as many as 5 individuals , the *Coreidae* family 1 species (*Anoplocnemis phasiana*) as many as 5 individuals , the *Acrididae* family 2 species (*Locusta migratoria*, *Oxya chinensis*) as many as 15 individuals , the *Pentatimidae* family 1 species (*Podium nigrispinus*) as many as 7 individuals , the *Allydidae* family 1 species (*Loptocorisa acuta*) as many as 7 individuals , and the *Ampullariidae* family 1 species (*Pila ampullacea*) as many as 45 individuals . *Oxya chinensis* (*Green grasshopper*) as many as 33 individuals. Ecological factors in rice fields in Tebat Karai District, Kepahiang Regency with air temperatures ranging from 25 °C to 27 °C, humidity ranging from 70% to 85%, and soil pH ranging from 5.0 to 6.1.

Discussion

Based on the research results in Table 4.1, 10 families and 11 species were obtained, namely the *Estrildidae* family 1 species (*Lonchura maja*), the *Prygomorphidae* family 1 species (*Atractomorpha arenulata*), the *Gryllidae* family 1 species (*Grillis bimaculatus*), the *Coreidae* family 1 species (*Anoplocnemis phasiana*), the *Acrididae* family 2 species (*Locusta migratoria*, *Oxya chinensis*), the *Pentatimidae* family 1 species (*Podium nigrispinus*), the *Allydidae* family 1 species (*Loptocorisa acuta*), and the *Ampullariidae* family 1 species (*Pila ampullacea*). Pests or species that are often found in rice plants are *Pila ampullacea* (golden snail) , *Oxya chinensis* (green grasshopper) and *Lonchura maja* (Sparrow), and these pests also have different impacts on rice productivity. Identification of pest species and understanding their impacts are important first steps in effective pest control. Through the application of appropriate control strategies, farmers can reduce pest losses and increase rice productivity and quality, which ultimately contributes to food security and economic well-being. Reddy et al. (2024), pests that often attack rice plants such as grasshoppers can damage the physical structure of plants (leaves and stems), which directly reduces the ability of plants to photosynthesize and absorb nutrients. In addition, pests such as golden apple snails eat rice seedlings, reducing the number of plants that grow healthy and productive. Then sparrows and seed-sucking insects damage the quality and quantity of

grain, which has a direct impact on crop yields and economic value province, which only found 8 types of pests that attack rice plants, namely ground bedbugs (*Scotinophara coarctata*), Grayak caterpillars (*Mythimna separata*), white rice stem borers (*Scirpophaga innotata*), brown planthoppers (*Nilaparvata lugens*), stink bugs (*Leptocorisca acuta*), wood grasshoppers (*Valanga nigricornis*), mulberry snails (*Pomacea caniculata*), white-rumped shama (*Lonchura striata*). Papatungan et al (2024) pests found in rice plants in Konarom Village, North Konarom Village, West Konarom Village, Southeast Dumoga District were only 6 species such as Green Planthopper (*Nephotettix virescens*), Brown Planthopper (*Nilaparvata lugens*), Leaf roller moth (*Chanaphalocrosis*), and stink bug (*Leptocorisca acuta*), Seedling Ant (*Paederus littoralis*), and Orong-orong. Manueke et al (2017) found 12 species of pests in rice plants in Makalonsow Village, East Tondano District, Minahasa Regency, namely white rice stem borer (*Scirpophaga innotata*), striped rice stem borer (*Chilo suppressalis*), white pest (*Nymphula depunctalis*), purple rice stem borer (*Sesamia inferens*), brown planthopper (*Nephotettix virescens*), green planthopper (*Nilaparvata lugens*), stink bug (*Leptocorisca acuta*), black ladybug (*Pareaucosmetus sp.*), rice powder (*Sitophilus oryzae*), golden snail (*Pomacea caniculata*), rice bird pests (*Passer spp.*), and rice rat pests (*Ratus argentiventer*). Meanwhile, Sumayanti's research (2021) in the rice planting area in Curug District found 8 types of pests, namely ground bedbugs (*Scotinophara coarctata*), Armyworms (*Mythimna separata*), white rice stem borers (*Scirpophaga innotata*), brown planthoppers (*Nilaparvata lugens*), stink bugs (*Leptocorisca acuta*), wood grasshoppers (*Valanga nigricornis*), mulberry snails (*Pomacea caniculata*), white-rumped shama birds (*Lonchura striata*).

Types of pests found at 1 month of age

At the age of 1 month, 79 individuals of 11 species of pests were found, such as *Lonchura maja*, *Atratomorpha crenulata*, *Gryllus bimaculatus*, *Anoplocnemis phasiana*, *Epilachna admirabilis*, *Locusta migratoria*, *Oxya chinensis*, *Podisus nigrispinus*, *Leptocorisca acuta*, *Phaeoba fumosa*, *Pila ampullacea*. In this research area, the most common species found at the age of 1 month was the *Pila ampullacea* species (golden apple snail) with 28 species. Golden apple snails tend to dominate young rice plants due to food availability and environmental conditions. Newly planted rice seedlings and young leaves are rich food sources for golden apple snails. Golden apple snails eat soft and easily digestible plant tissue, causing significant damage. Then newly planted rice fields usually have stable waterlogging, ideal conditions for golden apple snails to breed and spread. Rusinque (2021) said that golden apple snails usually eat young rice plants, especially at the seedling and early growth stages. Based on table 4.2, it shows that the species *Lonchura maja* (sparrows) and *Epilachna admirabilis* (cow beetles) are the least found in one-month-old rice plants, 2 species each. The factor why sparrows and cow beetles are rarely found in one-month-old rice plants is because rice plants of this age do not yet have seeds as a food source for sparrows so they have not produced seeds as the main source of food for sparrows. In addition, one-month-old rice plants do not yet have mature stems and leaves as a food source for cow beetles. Arma (2023) revealed that sparrows are grain-eating animals, which means they are more active during the rice ripening phase when the seeds have formed. Sparrows tend to forage in more open and dry areas, as well as on more mature plants. On the other hand, Pramesti (2022) said that the ladybird beetle is a type of insect known as a natural predator for several agricultural pests. This beetle usually eats the leaves and stems of more mature plants, so it is less commonly found on young rice. Ladybird beetles are more active on plants with thicker canopies and older leaves. Sparrows tend to be present during the rice ripening phase (Arma, 2023), while ladybird beetles appear more often in the vegetative and generative phases when the plants have thicker leaves and stems (Pramesti & Indriyanti, 2022).

Types of pests found at 2 months of age

At the age of 2 months, 82 individuals of 8 species of pests were found, namely *Lonchura maja*, *Atratomorpha crenulata*, *Locusta migratoria*, *Oxya chinensis*, *Podisus nigrispinus*, *Leptocorisca acuta*, *Phaeoba fumosa*, *Pila ampullacea*. The most abundant species found in the research area of 2-month-old rice plants were *Oxya chinensis* (green grasshopper) and *Pila ampullacea* (golden snail) species, each with 24 species. The factor that caused green grasshoppers and golden snails to be found abundantly in two-month-old rice plants is because at the age of two months, rice plants begin to have more developed leaves and stems. This condition provides an abundant food source for green grasshoppers and golden snails. Stable waterlogging in the rice fields provides an ideal habitat for golden snails to breed. In addition, green grasshoppers find a fertile environment to forage and lay eggs. Two-month-old rice plants are in the active vegetative growth stage. Telaumbanua et al (2021) explained that green grasshoppers are one of the main pests that often attack rice plants. Green grasshoppers eat young and fresh rice leaves, causing damage to plant tissue and reducing photosynthesis capacity. Green grasshoppers also have a fast reproductive cycle, with eggs hatching in a short time so that the population can increase rapidly. In addition, green grasshoppers can live in various environmental conditions and are often found

in areas with plants that are growing well. Meanwhile, according to Saleh (2021), stagnant water such as rice fields is a habitat for golden snails for reproduction. Species that were not found in the research area of 2-month-old rice plants were *Gryllus bima culatus* (Crickets), *Epilachna admirabilis* (ladybugs) and *Anoplocnemis phasiana* (ladybugs). The cause of the absence of crickets, ladybugs and ladybugs in two-month-old rice plants was due to non-ideal environmental conditions, flooded rice fields in two-month-old rice plants did not provide a suitable habitat for crickets that prefer dry environments. Then the food availability factor, two-month-old rice plants do not have leaves and stems as a food source for ladybugs and ladybugs. Odhiambo et al (2022) said that crickets prefer dry and grassy habitats, which are usually not found in flooded rice fields. According to Pramesti and Indriyanti (2022), ladybugs usually eat older plant leaves, rarely found on young plants. Then ladybugs are more active on plants with thicker canopies and older leaves. Meanwhile, Omkar (2016) revealed that ladybugs prefer habitats with more mature plants.

Types of pests found at 3 months of age

At the age of 3 months, the pests found were 94 individuals from 10 species such as *Lonchura maja*, *Atratomorpha crenulata*, *Gryllus bimaculatus*, *Anoplocnemis phasiana*, *Epilachna admirabilis*, *Locusta migratoria*, *Oxya chinensis*, *Podisus nigrispinus*, *Phaeoba fumosa*, *Pila ampullacea*. *Lonchura maja* species (sparrows) were mostly found in plants aged 3 months, which was 23 individuals. The factor that caused sparrows to be found in abundance in three-month-old rice plants was the abundant availability of food. At the age of three months, rice plants begin to enter the generative phase, where rice grains begin to form and mature. This provides an abundant food source for sparrows. Rice fields that have begun to dry out after the vegetative phase provide an ideal habitat for sparrows to forage and nest. Arma (2023) said that sparrows have a diet as grain eaters who really like ripe rice grains. Sparrows also often nest near food sources, such as rice fields, to facilitate access to food for their children. The environmental adaptation of sparrows that can live in various environmental conditions, including in well-irrigated agricultural areas. Echo (2021) revealed that sparrows actively forage in the morning and evening, when the temperature is not too hot, which coincides with the conditions in the rice fields at this stage. *Leptocorisa acuta* (rice bugs) species were not found in plants at the age of 3 months. The reason why rice bugs were not found in rice plants at this age is because the rice plants have not reached the seed maturation phase which is the main food source for rice bugs. Rice bugs really prefer rice seeds that are in the process of filling and maturing, which usually occurs after the age of three months. Purnomo's (2013) research also did not find any brown planthoppers in 3-month-old rice plants because brown planthoppers usually attack rice grains that have matured milk. At the age of 3 months, rice plants are still in the vegetative phase and do not yet have milk-ripe rice grains, so they are not targeted by brown planthopper pest attacks. Wanda (2022) reported that brown planthoppers are insects that suck plant fluids and eat rice grains that are still in the filling stage.

Ecological Factors

The results of the study showed ecological factors in one-month rice plants with a temperature of 25 °C, 85% humidity and soil pH of 5.8, the most abundant species were *Pila ampullacea* (golden snails), and the least were *Lonchura maja* (sparrows) and *Epilachna admirabilis* (cow beetles). Golden snails are usually found in areas with warm air temperatures, such as in wetlands or flooded rice fields. Warm temperatures facilitate the growth and development of these snails. Then high humidity is very suitable for golden snails, which live in wet environments and are often in water. High humidity helps these snails keep their bodies moist. Furthermore, golden snails are not very sensitive to soil pH because they live in water. However, they prefer slightly acidic to neutral water for optimal development. Paramasiva et al. (2024) said that sparrows are often found in areas with moderate temperatures. They can adapt to a variety of temperature conditions, but they are more active at temperatures that are not too extreme, can adapt to a variety of humidity levels, but these birds prefer humidity that is not too high because their feathers can get wet and it is difficult to fly in high humidity conditions. Then sparrows are not directly affected by soil pH, but soil pH affects the rice plants they eat. Soil that is too acidic or alkaline can affect the quality of rice and, in turn, the sparrow population.

Similar to ladybugs, these beetles prefer warm temperatures for their growth and reproduction. However, they are less adaptable than golden snails in wet environmental conditions. Ladybugs also require moderate humidity. Too much humidity can cause fungus to grow on their bodies or on the plants they feed on. As for pH, ladybugs prefer soil with a neutral to slightly acidic pH, which supports the growth of their host plants. Soil that is too acidic or alkaline can affect the availability of nutrients for their host plants. Measurement of ecological factors in two-month-old rice plants is a temperature of 27 °C, humidity of 70% and soil pH of 5.0. The most common species found in two-month-old rice plants are the species *Oxya chinensis* (green grasshopper) and *Pila ampullacea* (golden apple snail), while the species

not found are *Gryllus bima culatus* (cricket), *Epilachna admirabilis* (ladybug) and *Anoplocnemis phasiana* (ladybug). The green grasshopper and golden snail species can thrive at a temperature of 27°C, 70% humidity, and a soil pH of 5.0. These conditions support their activity and growth. Meanwhile, crickets, ladybugs, and ladybirds were not found due to ecological factors that may be less ideal for their specific needs, such as a preference for lower temperatures and humidity or a more neutral soil pH. Ecological factor measurements on three-month-old rice plants are temperature 25 °C, air humidity 72% and soil pH 6.1%. The dominant species found is *Lonchura maja* (sparrow), while *Leptocorisa acuta* (rice bug) species is not found in rice plants of this age. Sparrows can generally adapt to moderate to warm temperatures. Stable and non-extreme temperatures allow them to find food and nesting sites more easily. Then sparrows can adapt to various levels of humidity, but humidity that is too high or too low can affect their food availability. At three months of age, moderate humidity supports the availability of rice seeds and small invertebrates that are food for sparrows. As for soil pH, it does not directly affect sparrows, but the right pH can support the growth of rice plants which are a source of food for them. Neutral to slightly acidic soil pH, which generally supports rice growth, can increase food availability for sparrows. Unlike stink bugs that tend to be more active in higher and more stable temperatures, stink bugs also require high humidity to thrive and survive, especially since they live in flooded rice environments. If the humidity decreases or does not match their needs, stink bugs may not be found. In addition, stink bugs require a soil pH that is suitable for the rice plants they inhabit. Soil pH that is too acidic or alkaline can affect the growth of rice plants, which in turn affects the presence of stink bugs

CONCLUSION AND SUGGESTIONS

Conclusion

The pests found at the research location numbered 11 species belonging to 10 families, namely the Estrildidae family. (*Lonchura maja*), Gryllidae Family (*Grillus bimaculatus*), Coreidae Family (*Anoplocnemis phasiana*), Acrididae Family (*Locusta migratoria*, *Oxya chinensis*), Pentatimidae Family (*Podium nigrispinus*), Allydidae Family (*Leptocorisa acuta*), Ampullariidae Family (*Pula ampullacea*). Ecological factors in rice fields in Tebat Karai District, Kepahiang Regency with air temperatures ranging from 25 °C to 27 °C, humidity ranging from 70% to 85%, and soil pH ranging from 5.0 to 6.1.

Suggestion

Further research is needed on the types of rice pests or oryza sativa with different ages in Tebet Karya sub-district, Kepahiang district to find pests that have not been found.

REFERENCES

- Al-Taweel, A. A., Saleem, A. M., & Hameed, H. S. (2020). Survey on rice insect pests in Misan province, Iraq. *Zanco. Journal of Pure and Applied Sciences*, 32(3), 96-105.
- Amania, M. A. (2011). Pengaruh pemberian strain nostok cpg8, cpg24 dan cim7 terhadap pertumbuhan vegetatif dan generatif tanaman padi (*Oriza sativa* L.) varietas ciherang. *Skripsi*. Universitas Indonesia
- Anggara, W.A Dan Sudarmaji. (2011). *Pengendalian Hama Tikus Terpadu*. Jawa Barat: Badan Litbang Pertanian
- Ariyane O. S., Siwu.J.P., Christina L. Salaki. Noni N., dan Wanta. (2011). Inventarisasi Parasitoid Hama Tanaman Padi Sawah di Kabupaten Minahasa Utara. *Jurnal Universitas Sam Ratulangi*.
- Arma, W.A. (2023). Distribusi Temporal Kunjungan Burung Hama (*lonchura* sp.) pada Agroekosistem Padi di Kelurahan Antirogo Kecamatan Sumpersari Kabupaten Jember, *Skripsi Agroteknologi*, Fakultas Pertanian, Universitas Jember.
- Benny, I.G. (2013). *Jenis-Jenis Serangga Hama Padi (Oryza Sativa) Pada Persawahan Di Desa Air Hitam Kecamatan Ujan Mas Kabupaten Kepahiang*. Skripsi Universitas Muhammadiyah Bengkulu.
- Brooks, J.E dan F.P. Rowe. (1979). *Commercial Rodent Control*. WHO/NBC/79.726.
- Budiharsanto, A. S. (2006). Mikrohabitat dan relung ekologi hama walang sangit (*Heteroptera: Leptocorisa* sp) dan Belalang (*Orthoptera: Locus* sp) pada tanaman padi sawah. *Skripsi*. Universitas Negeri Semarang
- Donggulo, Candra V., Iskandar Lapanjang, and Usman Made. (2017). Pertumbuhan Dan Hasil Tanaman Padi (*Oryza Sativa* L.) Pada Berbagai Pola Jajar Legowo Dan Jarak Tanam. *Jurnal Agroland* 4(1):35–37.

- Echo, P. (2021). *Cara Pengendalian Hama Burung Pipit yang Sering Digunakan Petani Padi*, Diakses pada tanggal 30 Juli 2024 pada: <https://fpp.umko.ac.id/2021/03/29/cara-pengendalian-hama-burung-pipit-yang-sering-digunakan-petani-padi/>
- Hadi, Mochamad., Udi Tarwodjo., Rully Rahadian. (2009). *Biologi Insekta Entomologi*. Yogyakarta: Graha Ilmu.
- Hidayat, Anwar. (2001). *Mengidentifikasi Jenis dan Sifat Hama*. Jakarta: SMK Pertanian.
- MacKinnon, J., Philips, K. & Ballen, B.V. (2010). *Burung-burung di Sumatera, Jawa, Bali, dan Kalimantan (termasuk Sabah, Serawak, dan Brunei Darussalam)*. Bogor: Puslitbang Biologi-LIPI & Birdlife International Indonesia Programme.
- Manueke, J., Berty H. A. Dan Evangeline A. P. (2017). Hama-Hama Pada Tanaman Padi Sawah (*Oryza Sativa L.*) Di Kelurahan Makalonsow Kecamatan Tondano Timur Kabupaten Minahasa. *Jurnal Eugenia*. Vol 23 No. 3.
- Manya. (2018). Inventarisasi Serangan Hama Anakan Meranti Merah (*Shorea Selanica*) Di Lokasi Cimtrop Universitas Palangka Raya Kalimantan Tengah. *Jurnal A grisilvika Vol 1. No. 1*.
- Odhiambo, M.A., Olweny, C.O., & Okuto, E.O. (2022). Habitat Preference and Distribution of Crickets (Orthoptera; Gryllidae) in Western Kenya, *Journal of Biology, Agriculture and Healthcare* 12(6), 22-34
- Paracaya. (2008). *Pengendalian Hama dan Penyakit Tanaman Organic*. Yogyakarta: Kanisius.
- Paramasiva, I., Madhusudhan, P., Vineetha, U., & Srilakshmi, C.H. (2024). Possible impact of climate change on incidence of insect pests of rice, *International Journal of Advanced Biochemistry Research*, 8(1), 498-501.
- Prastiyo, A. (2016). *Populasi Relatif Belalang Kembara (Locusta Migratoria Manilensis Meyen) Pada Beberapa Jenis Vegetasi Di Kawasan Perkebunan Tebu Di Lampung Tengah*. Skripsi. Universitas Lampung.
- Pramesti, A.S., & Indriyanti, D.R. (2022). *Organisme Pengganggu Tanaman*, Buku Materi, Jurusan Biologi, Fakultas MIPA, Universitas Negeri Semarang.
- Purwanto, 2008. *Intensifikasi Padi Sawah Melalui Pengelolaan Tanaman Terpadu*. PT MaragaBorneo Tarigas. Jakarta.
- Reddy, N. V., Shanker, S., Anitha, G., & Rana, D.K. (2024). Comparing various bio-intensive pest management modules in rice. *Journal of Biological Control*, 38(1), 87–91.
- Rusique, L., Maleita, C., Abrantes, I., Palomares-Rius, J.E., & Inácio. (2021). Meloidogyne graminicola—A Threat to Rice Production: Review Update on Distribution, Biology, Identification, and Management. *Biology*, 10(1), 1-19.
- Salaki, C.L. dan Emmy, S. (2012). Penyebaran Populasi Hama *Paraecosmetus Sp.* Di Kabupaten Minahasa Tenggara. *Jurnal Eugenia Vol. 18 No. 2*
- Saputro, A. S., Winarni, S., & Santi, S. (2021). Identifikasi dan intensitas serangan hama pada tanaman padi di Desa Pogung, Kabupaten Sleman. *Jurnal Produksi Tanaman*, 9(2), 118-126.
- Triaswanto, F., Riswanta, U. R. dan Naufal U.D.U. (2019). Pola aktivitas harian Leptocorisa oratorius Fabricius (Hemiptera: Alydidae) pada berbagai ketinggian tempat di Daerah Istimewa Yogyakarta. *Jurnal Entomologi Indonesi*. Vol. 16 No. 2
- Triwidodo, A., Kurniawan, E., & Suparta, I. W. (2019). Analisis keberadaan hama dan penyakit pada tanaman padi di Desa Kepunduan, Kabupaten Badung, Bali. *Jurnal Agroekoteknologi FP*, 7(2), 99-109.
- Tunggali, Irma S, Juliet, F Dien. (2013). *Serangga-serangga Yang Berasosiasi Pada Persemaian Padi Sawah Di Kecamatan Kotamobagu Timur Kabupaten Bolang Mongondow*. Manado: Universitas Sam Ratulangi
- Utama, Zulman H. (2015). *Budidaya Padi Pada Lahan Marjinal*. Yogyakarta: CV.Andi Offset.
- Wiguna, G. (2013). Pemilaian Ketahanan Pada Tanaman Mentimun Terhadap Kumbang Pemakan Daun (*Aulacophora Aimillis Oliver*). *Jurnal IPTEK Tanaman Sayur No. 003*.
- Yanuari, M. (2016). *Aplikasi Diagnose Hama Tanaman Padi Menggunakan Metode Naive Bayes*. Gresik: Skripsi Universitas Muhammadiyah Gersik.
- Zuliyanti, S. 2007. Hama-hama tanaman padi. *Jurnal HPT PD USU*.