INTISARI

Lalat buah merupakan salah satu hama penting yang merugikan tanaman hortikultura. Salah satu komoditas yang terkena dampak akibat serangan lalat buah di Provinsi D I Yogyakarta adalah salak var. pondoh. Provinsi D I Yogyakarta terutama Kabupaten Sleman adalah salah satu sentra produksi salak di Indonesia yang telah diekspor ke berbagai negara. Populasi lalat buah dipengaruhi faktor abiotik dan biotik. Penelitian ini bertujuan untuk mempelajari dinamika dan peramalan populasi lalat buah hama di pertanaman salak. Penelitian dilakukan dengan memasang perangkap pada bulan Juli 2022 hingga Mei 2023 di kebun salak yang tergabung dalam Asosiasi Petani Salak Mitra Turindo, Kecamatan Turi, Kabupaten Sleman. Lahan salak terbagi dalam Grup 1, Grup 2 dan Grup 3 dengan pengelompokkan berdasarkan sanitasi lahan dan tanaman inang alternatif lalat buah di sekitar lahan salak. Atraktan metil eugenol digunakan pada Perangkap Steiner modifikasi. Data faktor cuaca (Curah Hujan, Kelembapan Udara, Suhu Udara, dan Kecepatan Angin) diperoleh dari Stasiun Klimatologi Yogyakarta, BMKG. Data dinamika populasi dan faktor cuaca digunakan untuk meramalkan populasi lalat buah. *Moving Average* digunakan untuk mendapatkan formula peramalan yang dapat digunakan untuk meramalkan populasi lalat buah. Metode *Moving Average* yang digunakan adalah *Simple Moving Average* (SMA), *Weighted Moving Average* (WMA), dan *Exponential Smoothing* (ES). Dinamika populasi *Bactrocera* spp. membentuk pola musiman. Curah hujan, sanitasi lahan, dan tanaman inang alternatif yang ada di sekitar lahan salak menjadi faktor yang paling berpengaruh terhadap populasi lalat buah. Pada curah hujan tinggi populasi lalat buah menurun, sebaliknya curah hujan rendah populasi lalat buah meningkat. Populasi lalat buah lebih tinggi di lahan salak yang kotor dibandingkan dengan lahan yang bersih dan populasi lalat buah lebih tinggi pada lahan salak dengan tanaman inang alternatif lebih banyak dibandingkan dengan lahan yang tanaman inang alternatifnya lebih sedikit. Metode peramalan terbaik adalah *Simple Moving Average* (SMA) n=14 dengan formula $y = -0{,}46X_1 - 0{,}81X_2 - 16{,}01X_3 - 31{,}60X_4 + 619{,}26$, R^2 = 0,85.

Kata kunci: Dinamika populasi, Faktor cuaca, Lalat buah, Peramalan.

ABSTRACT

Fruit flies are significant pests that damage horticultural crops. Salacca var. pondoh, cultivated in Yogyakarta, is one of the commodities affected by fruit fly infestation. Sleman Regency, is among the leading producers of salacca in Indonesia, exported globally. The population of fruit flies is impacted by both abiotic and biotic factors. This research aimed study the dynamics and forecast of fruit fly population in salacca orchads. The study was conducted by placing modified Steiner traps contained methyl eugenol in salacca orchards that are part of the Mitra Turindo Salak Farmers Association in Sleman from July 2022 to May 2023. The orchards were categorized into three groups based on sanitation practices and the presence of alternative host plants for fruit flies around the orchards. Weather factors data (rainfall, relative humidity, temperature, and wind speed) were collected from the Yogyakarta Climatology Station, BMKG. Population dynamics data and weather factors were used to forecast the population of fruit flies. The forecasting formula for the population was obtained using the Moving Average methods. The Simple Moving Average (SMA), Weighted Moving Average (WMA), and Exponential Smoothing (ES) methods were utilized. The population dynamics of fruit flies, form a seasonal pattern. Rainfall, sanitation, and alternative host plants around orchards were the most influential factors on fruit fly populations. During periods of high rainfall, the population decreased, while low rainfall, the population increased. The population of fruit flies exhibits a greater prevalence in dirty orchards relative to their presence in clean orchards. Furthermore, fruit fly population tends to be higher in salacca orchards that contain a larger number of alternative host plants as opposed to those with a lower number of alternative host plants. The Simple Moving Average (SMA) n=14 is considered the optimal forecasting method with a formula of $y = -0{,}46X_1 - 0{,}81X_2 - 16{,}01X_3 - 31{,}60X_4 + 619{,}26$, R^2 = 0,85.

Keywords: Forecasting, Fruit flies, Population dynamic, Weather factors.