

INTISARI

GAMBARAN PERTUMBUHAN LARVA LALAT PADA BANGKAI TIKUS PUTIH *Strain Wistar* DENGAN PEMBERIAN ARSENIK TRIOKSIDA DALAM MEMPERKIRAKAN *POST MORTEM INTERVAL*

Rahmat Hidayat, Yudha Nurhantari, Sitti Rahmah U.

LATAR BELAKANG: Kematian adalah akhir dari kehidupan. Setelah kematian, tubuh makhluk hidup akan mengalami pembusukan, salah satu penyebab kematian tidak disadari adalah keracunan logam berat arsenik trioksida (As_2O_3) yang terkontaminasi air minum. Seiring berkembangnya ilmu entomologi forensik dalam penentuan *Post Mortem Interval (PMI)*, perlu dilakukan penelitian untuk menyediakan data entomologis yang dapat menunjang analisa kasus kematian yang diduga akibat intoksikasi As_2O_3 .

TUJUAN: Membandingkan proses pembusukan bangkai, genus larva, urutan kedatangan, ukuran panjang dan berat larva pada bangkai tikus terpapar As_2O_3 dengan bangkai tikus kontrol.

METODE: Studi eksperimental kohort dengan mengamati bangkai tikus yang terpapar As_2O_3 kemudian mengidentifikasi genus, urutan kedatangan, dan pengaruhnya terhadap panjang dan berat larva kemudian membandingkannya dengan bangkai tikus kontrol.

HASIL: Proses pembusukan pada bangkai As_2O_3 lebih lama daripada bangkai kontrol. Genus larva yang ditemukan pada bangkai tikus kontrol yaitu, *Sarcophaga sp.*, *Calliphora sp.*, dan *Chrysomya sp.*. Sedangkan pada bangkai tikus As_2O_3 ditemukan *Calliphora sp.*, *Chrysomya sp.*, *Phormia sp.*, *Sarcophaga sp.*, *Auchmeromyia sp.*, dan *Cordylobia sp.* Urutan kedatangan lalat pada bangkai tikus kontrol yaitu, *Sarcophaga sp.*, *Calliphora sp.*, dan *Chrysomya sp.*. Urutan Kedatangan lalat pada bangkai tikus As_2O_3 0,5LD50 yaitu *Sarcophaga sp.*, *Calliphora sp.*, *Phormia sp.*, dan *Auchmeromyia sp.*; LD50, yaitu *Calliphora sp.*, *Chrysomya sp.*, *Phormia sp.*, *Sarcophaga sp.*, *Auchmeromyia sp.*, dan *Cordylobia sp.*; Dan 2LD50 yaitu *Calliphora sp.*, *Chrysomya sp.*, *Phormia sp.*, *Sarcophaga sp.*, dan *Auchmeromyia sp.*. Terdapat perbedaan signifikan hari ketiga rerata panjang dan berat larva *Chrysomya sp.* pada bangkai kontrol dengan bangkai tikus As_2O_3 2LD50. Terdapat perbedaan signifikan rerata rerata panjang dan berat larva *Calliphora sp.* dan *Sarcophaga sp.* pada bangkai tikus kontrol dengan bangkai tikus As_2O_3 hari kelima.

KESIMPULAN: Terdapat perbedaan proses pembusukan, genus dan urutan kedatangan lalat pada bangkai tikus As_2O_3 dan kontrol. Adanya pengaruh arsenik trioksida menyebabkan larva *Sarcophaga sp.* dan *Chrysomya sp.* lebih panjang dan lebih ringan dibandingkan pada bangkai kontrol. Sedangkan pengaruh As_2O_3 pada larva *Calliphora sp.* menunjukkan hasil yang sebaliknya.

Kata Kunci: Post Mortem Interval, Pertumbuhan larva lalat, Arsenik trioksida (As_2O_3).

ABSTRACT

THE GROWTH OF FLY LARVAE ON DEAD WHITE RATS *Strain Wistar*
WITH EXPOSURE OF ARSENIC TRIOXIDE ON ESTIMATING POST MORTEM
INTERVAL

Rahmat Hidayat, Yudha Nurhantari, Sitti Rahmah U.

BACKGROUND: Death marks the end of life. After death, the body of living creatures undergo decomposition. One of the causes of death that usually went unnoticed was heavy metal poisoning by arsenic trioxide (As_2O_3) contained in drinking water. As the science of forensic entomology is advancing in determining the post-mortem interval (PMI), more research is needed to provide entomologic data to support cases analyzing deaths that were suspected to be caused by As_2O_3 poisoning.

PURPOSE: To compare decomposition process, genus, sequence of arrival, and length and weight of fly larvae between rats that were exposed to As_2O_3 and control rats.

METHODS: This study used experimental cohort design observing dead rats that had been exposed to As_2O_3 and then identifying the genus, sequence of arrival and its effect on the larvae's weight and length and then comparing them to control rats.

RESULT: Decomposition process of As_2O_3 was slower period than control dead rats. The genus of larvae found on control rats were *Sarcophaga sp.*, *Calliphora sp.*, and *Chrysomya sp.*, whereas on the As_2O_3 exposed rats were *Calliphora sp.*, *Chrysomya sp.*, *Phormia sp.*, *Sarcophaga sp.*, *Auchmeromyia sp.*, and *Cordylobia sp.* The sequence of arrival of flies on the As_2O_3 rats 0,5LD50 were *Sarcophaga sp.*, *Calliphora sp.*, *Phormia sp.*, and *Auchmeromyia sp.*; LD50 were *Calliphora sp.*, *Chrysomya sp.*, *Phormia sp.*, *Sarcophaga sp.*, *Auchmeromyia sp.*, and *Cordylobia sp.*; and 2LD50 were *Calliphora sp.*, *Chrysomya sp.*, *Phormia sp.*, *Sarcophaga sp.*, and *Auchmeromyia sp.* On the third day there were significant difference of means of length and weight of *Chrysomya sp.* larvae on control rats and As_2O_3 rats 2LD50. On the fifth day there were significant difference of means of length and weight of *Calliphora sp.* and *Sarcophaga sp.* larvae on control rats and As_2O_3 rats.

Conclusion: There were differences on decomposition process, genus and sequence of arrival of flies and larvae between As_2O_3 rats and control rats. The presence of As_2O_3 2LD50 caused the larvae of *Sarcophaga sp.* and *Chrysomya sp.* to be lengthier and weight less compared to control rats, whereas the effect of arsenic trioxide on larvae of *Calliphora sp.* was the opposite.

KEYWORDS: Post Mortem Interval (PMI), fly larvae growth, arsenic trioxide (As_2O_3).