

ABSTRAK

REKONSTRUKSI PALINOSTRATIGRAFI DAN INTERPRETASI PALEOEKOLOGI BERDASARKAN ASOSIASI PALINOMORF, FORMASI LEMAT, DAERAH TANJUNG JABUNG BARAT, JAMBI

Oleh
Natasha Stella Arely
NIM: 111220131
(Program Studi Sarjana Teknik Geologi)

Kajian palinostratigrafi dan paleoekologi merupakan aspek penting dalam memahami faktor-faktor yang memengaruhi preservasi material organik. Penelitian ini dilakukan di Formasi Lemat, Kabupaten Tanjung Jabung Barat, Jambi, dengan tujuan menentukan umur relatif batuan berdasarkan palinostratigrafi, menginterpretasi kondisi paleoiklim dan kelembapan masa lampau yang kemudian digunakan untuk merekonstruksi paleoekologi, serta mengevaluasi implikasinya terhadap potensi hidrokarbon di daerah penelitian.

Metode yang digunakan meliputi identifikasi palinomorf dan analisis palinostratigrafi menggunakan taksa indeks. Interpretasi paleoiklim dilakukan berdasarkan rasio polen arboreal/non-arboreal dan persentase spora. Interpretasi lingkungan pengendapan didasarkan pada asosiasi taksa palinomorf dan perhitungan *Palynological Marine Index*. Hasil paleoiklim dan lingkungan pengendapan kemudian diintegrasikan untuk menyusun tabel paleoekologi untuk mengetahui perubahannya.

Hasil analisis menunjukkan bahwa interval penelitian memiliki umur Oligosen Akhir – Miosen Awal, ditunjukkan oleh kehadiran fosil indeks *Meyeripolis naharkotensis*, *Florschuetzia trilobata*, dan *Florschuetzia levipoli*. Asosiasi palinomorf didominasi oleh taksa *freshwater swamp* yang dicirikan oleh kehadiran spesies *Elaeocarpus* spp., *Dicolpopollis malesianus*, dan *Dicolpopollis* sp., serta *peat swamp* yang dicirikan oleh kehadiran spesies *Calophyllum type*, *Ctenolophon parvifolius*, *Cephalomappa type* dan *Austrobuxus nitidus*. Interpretasi paleoekologi menunjukkan bahwa daerah penelitian merupakan hutan tertutup dengan iklim hangat, berkembang dengan baik, dan kondisi yang relatif lembap. Kondisi paleoiklim hangat dan lembap, serta lingkungan rawa yang reduktif, dapat mendukung preservasi material organik yang cenderung membentuk kerogen tipe III, tetapi diperlukan data analisis geokimia untuk verifikasi lebih lanjut.

Kata kunci: *Formasi Lemat, palinomorf, paleoekologi, palinostratigrafi*

ABSTRACT

PALYNOSTRATIGRAPHIC RECONSTRUCTION AND PALEOECOLOGICAL INTERPRETATION BASED ON PALYNOMORPH ASSOCIATION, LEMAT FORMATION, WEST TANJUNG JABUNG AREA, JAMBI

By
Natasha Stella Arely
NIM: 111220131
(Geological Engineering Undergraduate Program)

Palynostratigraphy and paleoecology studies are crucial for understanding the factors influencing the preservation of organic matter. The study was conducted in the Lemat Formation, West Tanjung Jabung Regency, Jambi, with the aim of determining the relative age of rocks based on palynostratigraphy, interpreting past paleoclimate and moisture conditions, which were then used to reconstruct paleoecology, and assessing their potential for hydrocarbons in the study area.

The methods used included palynomorph identification and palynostratigraphic analysis using index taxa. Paleoclimate interpretation was based on the ratio of arboreal pollen to non-arboreal pollen and the percentage of spores. Interpretation of the depositional environment was based on associations among palynomorph taxa and Palynological Marine Index calculations. The paleoclimate and depositional environment results were then integrated to compile a paleoecological table to determine changes.

*The analysis results indicate that the study interval is Late Oligocene–Early Miocene in age, as evidenced by the presence of the index fossils *Meyeripolis naharkotensis*, *Florschuetzia trilobata*, and *Florschuetzia levipoli*. The palynomorph association is dominated by freshwater swamp taxa characterised by the presence of *Elaeocarpus* spp., *Dicolpopollis malesianus*, and *Dicolpopollis* sp. species, as well as peat swamps characterised by the presence of *Calophyllum* type, *Ctenolophon parvifolius*, *Cephalomappa* type, and *Austrobuxus nitidus* species. Paleoecological interpretations indicate that the study area was a closed forest with a well-developed warm climate and relatively humid conditions. Warm, humid paleoclimate conditions, as well as a reductive swamp environment, can support the preservation of organic material that tends to form type III kerogen, but geochemical data are needed for further verification.*

Keywords: Lemat Formation, paleoecology, palynomorph, palynostratigraphy