ABSTRAK

Udang galah (*Macrobrachium rosenbergii*) merupakan salah satu komoditas perikanan bernilai ekonomis tinggi yang berpotensi dikembangkan melalui penyediaan benih unggul. Penelitian ini bertujuan untuk mengkaji dan membandingkan performa reproduksi udang galah strain Aceh, Sumatera Utara, dan Siratu sebagai dasar pertimbangan dalam upaya produksi benih unggul. Penelitian dilaksanakan pada 1 Juli–20 Agustus 2026 di Laboratorium Hatchery dan Teknologi Budidaya, Fakultas Pertanian, Program Studi Akuakultur, Universitas Malikussaleh, serta Hatchery Kakap dan Kerapu Kembang Tani Lancang Barat, Kecamatan Dewantara, Aceh Utara. Penelitian dilakukan secara eksperimental dengan perkawinan dalam masing-masing strain. Parameter yang diamati meliputi tingkat perkawinan (*Mating Rate*), fekunditas, tingkat pembuahan (*Fertilization Rate*), tingkat penetasan (*Hatching Rate*), produksi larva, tingkat kelangsungan hidup (*Survival Rate*), dan kualitas air. Hasil penelitian menunjukkan bahwa *Mating Rate* pada ketiga strain mencapai 100%. Fekunditas rata-rata tertinggi diperoleh strain Aceh sebesar 1.812 butir/gram, diikuti Siratu sebesar 1.551 butir/gram dan Sumut sebesar 1.492 butir/gram. Rata-rata *Fertilization Rate* strain Aceh, Siratu, dan Sumut masing-masing sebesar 84,85%, 92,36%, dan 86,33%. Rata-rata *Hatching Rate* masing-masing sebesar 70,02%, 88,17%, dan 76,73%. Produksi larva tertinggi diperoleh strain Aceh sebesar 140.000 ekor/induk, diikuti Siratu sebesar 114.000 ekor/induk dan Sumut sebesar 94.400 ekor/induk. Sementara itu, *Survival Rate* tertinggi diperoleh strain Siratu sebesar 85,85%, diikuti Aceh sebesar 56,34% dan Sumut sebesar 52,70%. Hasil tersebut menunjukkan bahwa strain Aceh memiliki keunggulan dalam fekunditas dan produksi larva, sedangkan strain Siratu menunjukkan nilai tertinggi pada *Fertilization Rate*, *Hatching Rate*, dan *Survival Rate*. Dengan demikian, strain Aceh berpotensi mendukung produksi larva dalam jumlah besar, sedangkan strain Siratu berpotensi menghasilkan benih dengan kelangsungan hidup yang lebih tinggi. Perbedaan performa reproduksi antar strain dapat menjadi pertimbangan dalam pengelolaan induk dan pengembangan st*rate*gi pemuliaan untuk mendukung produksi benih udang galah yang berkualitas dan berkelanjutan.

Kata kunci: Aceh, *Macrobrachium rosenbergii,* performa reproduksi, produksi benih unggul, Siratu, dan Sumut.

ABSTRACT

The giant freshwater prawn (*Macrobrachium rosenbergii*) is a high-value fishery commodity with great potential for development through the provision of high-quality broodstock. This study aimed to examine and compare the reproductive performance of giant freshwater prawn strains from Aceh, North Sumatra, and Siratu as a basis for decision-making in efforts to produce high-quality broodstock. The study was conducted from July 1 to August 20, 2026, at the Hatchery and Aquaculture Technology Laboratory, Faculty of Agriculture, Aquaculture Study Program, Malikussaleh University, as well as at the Kembang Tani Lancang Barat Snapper and Grouper Hatchery in Dewantara Subdistrict, North Aceh. The study was conducted experimentally through intrastrain *mating.* The parameters observed included *mating Rate*, fecundity, *Fertilization Rate*, *Hatching Rate*, larval production, *Survival Rate*, and water quality. The results showed that the *mating Rate* for all three strains reached 100%. The highest average fecundity was recorded for the Aceh strain at 1,812 eggs/gram, followed by the Siratu strain at 1,551 eggs/gram and the North Sumatra strain at 1,492 eggs/gram. The average *Fertilization Rate*s for the Aceh, Siratu, and Sumut strains were 84.85%, 92.36%, and 86.33%, respectively. The average *Hatching Rate*s were 70.02%, 88.17%, and 76.73%, respectively. The highest larval production was achieved by the Aceh strain at 140,000 larvae per parent, followed by the Siratu strain at 114,000 larvae per parent and the North Sumatra strain at 94,400 larvae per parent. Meanwhile, the highest *Survival Rate* was achieved by the Siratu strain at 85.85%, followed by the Aceh strain at 56.34% and the North Sumatra strain at 52.70%. These results indicate that the Aceh strain has advantages in fecundity and larval production, while the Siratu strain showed the highest values for *Fertilization Rate*, *Hatching Rate*, and *Survival Rate*. Thus, the Aceh strain has the potential to support large-scale larval production, whereas the Siratu strain has the potential to produce shrimp seed with higher *Survival Rate*s. Differences in reproductive performance between strains can be taken into consideration in broodstock management and the development of breeding st*Rate*gies to support the production of high-quality and sustainable giant river prawn seed.

Keywords: Aceh, high-quality seed production, *Macrobrachium rosenbergii*, North Sumatra, reproductive performance, Siratu.