Sympatric speciation

Science, Biology

Variation and Selection H0: Variations in traits of an isopod does not confer a survival advantage in presence of simulated foragers; success of an isopod to avoid predation does not depend on variations in trait of an isopod. H1: Variations in traits of an isopod is responsible for the survival advantage in the presence of simulated foragers; success of an isopod to avoid predation becomes significantly guaranteed Data Analysis It is worth noting that the population of organism cannot at any one moment be constituted by individuals that deem exactly alike (Sokal 45). Arguably, there are considerable variations existing among individuals in a population. Basically, from the evolutionary point of view, such variations are quite essential. Likewise, it can be hypothesized that there are variations in several traits of wood lice (common terrestrial crustacean), in terms of mass, length, plates, and sprint speed that makes some to survive predation than others. With a view to observe how the natural selection acts upon variation in a population, this experimental set up entails documenting variations among several traits of wood lice and determining how and whether certain traits confer some survival advantage when subjected to simulated foragers. It also entails testing whether such survival advantages are depended on the forager used. In this case, the traits which included animal length, sprint speed, the number of dorsal plates, and the animal mass for multiple individuals of the isopods population were measured. Measures of central tendency (Means, and range), measures of dispersion (standard deviations, and variance) as well a t-test was conducted to ascertain this connotation. The total number of isopods was 50. This was divided into two portions victims and survivors (Tables 1 and 2). The length, sprint speed, number of

dorsal plates and weight of placed measured are also shown on tables 1 and 2. Table 1 Table 2 Survivors Plate # length(mm) weight(gms) Time (sec.) rate(cm/sec) 1 6 8 0. 07 82 0. 243902 2 7 10 0. 09 20 1 3 6 7 0. 06 19 1. 052632 4 7 10 0. 11 24 0. 833333 5 6 10 0. 1 15 1. 333333 6 5 5 0. 04 10 2 7 6 7 0. 06 21 0. 952381 8 7 6 0. 03 24 0. 833333 9 6 10 0. 06 14 1. 428571 10 7 10 0. 07 16 1. 25 11 7 9 0. 08 77 0. 25974 12 7 7 0. 05 50 0. 4 13 6 6 0. 06 15 1. 333333 14 7 11 0. 1 25 0. 8 15 5 8 0. 1 40 0. 5 16 6 8 0. 07 48 0. 416667 17 7 7 0. 05 41 0. 487805 18 6 7 0. 05 46 0. 434783 19 6 7 0. 04 18 1. 111111 20 7 10 0. 09 16 1. 25 21 6 7 0. 06 23 0. 869565 22 7 10 0. 09 22 0. 909091 23 7 11 0. 13 43 0. 465116 24 8 11 0. 16 39 0. 512821 25 7 10 0. 08 42 0. 47619 Additionally, the measures of central tendency (mean) and measures of dispersion variance) and the t-test value between the victims (variable 1) and the survivors (variable 2) were calculated. Tables3, 4, 5, and 6 shows the measures of central tendency, measures of dispersion, and the t-test value between the victims and survivors. Table 3 t-Test: Two-Sample Assuming Unequal Variances Number of Plates Variable 1 Variable 2 Mean 6. 68 6. 48 Variance 0. 226667 0. 51 Observations 25 25 Hypothesized Mean Difference 0 Df 42 t Stat 1. 165103 P(T