Question ID 2c06139b

Assessment	Test	Domain	Skill	Difficulty
SAT	Reading and Writing	Information and Ideas	Command of Evidence	■■■

ID: 2c06139b

Tadpole Body Mass and Toxin Production after Three Weeks in Ponds

Population density	Average tadpole body mass (milligrams)	Average number of distinct bufadienolide toxins per tadpole	Average amount of bufadienolide per tadpole (nanograms)	Average bufadienolide concentration (nanograms per milligram of tadpole body mass)
High	193.87	22.69	5,815.51	374.22
Medium	254.56	21.65	5,525.72	230.10
Low	258.97	22.08	4,664.99	171.43

Ecologist Veronika Bókony and colleagues investigated within-species competition among common toads (*Bufo bufo*), a species that secretes various unpleasant-tasting toxins called bufadienolides in response to threats. The researchers tested *B. bufo* tadpoles' responses to different levels of competition by creating ponds with different tadpole population densities but a fixed amount of food. Based on analysis of the tadpoles after three weeks, the researchers concluded that increased competition drove bufadienolide production at the expense of growth.

Which choice uses data from the table to most effectively support the researchers' conclusion?

A. The difference in average tadpole body mass was small between the low and medium population density conditions and substantially larger between the low and high population density conditions.

B. Tadpoles in the low and medium population density conditions had substantially lower average bufadienolide concentrations but had greater average body masses than those in the high population density condition.

C. Tadpoles in the high population density condition displayed a relatively modest increase in the average amount of bufadienolide but roughly double the average bufadienolide concentration compared to those in the low population density condition.

D. Tadpoles produced approximately the same number of different bufadienolide toxins per individual across the population density conditions, but average tadpole body mass decreased as population density increased.

ID: 2c06139b Answer

Correct Answer: B

Rationale

Choice B is the best answer. This data shows that the tadpoles in the high-density pond (meaning those with the most competition) didn't grow as big as the other two groups but produced more bufadienolide.

Choice A is incorrect. This doesn't fully support the conclusion. It doesn't include any data about bufadienolide production. Choice C is incorrect. This doesn't fully support the conclusion. It doesn't include any data about growth. Choice D is incorrect. This doesn't fully support the conclusion. It doesn't demonstrate that the tadpoles

in the high-density pond produced more bufadienolide overall. The fact that they didn't produce more kinds of bufadienolide isn't relevant to the conclusion.

Question Difficulty: Hard