

Hello dear friends,

At Mats' request, today I will answer a question that surely you have all had on a warm summer evening during a barbecue or chill session outside... Is this ant going to have a hangover tomorrow from that drop of beer he drank, or will he die from alcohol poisoning tonight? Can ants even get drunk?

First, let's take a step back and discuss when a human is drunk and how it is calculated. Just to get the boring stuff out of the way.

People are drunk with 1.5 to 3 per mille of alcohol in their blood. A blood alcohol level of 3 means that there are 3 milligrams of pure alcohol in 100 milliliters of blood. An adult man has about 5.5 liters of blood and an adult woman has about 4.5 liters of blood. So if we assume that an adult man drinks three 250ml beers of 5% alcohol (or three 100ml glasses of wine at 12% or three 35ml shots of 35%), the alcohol content in his blood would be approximately 0.44 permille (depending on when he started drinking and how long there was between drinks). Your liver breaks down alcohol at a rate of 0.002‰ per kilogram of body weight per hour. So it takes about an hour and a half for the alcohol from one standard glass to be broken down. You cannot speed up this process, not even by drinking coffee.

I later found out that you don't need any of the stuff explained above, as humans have an unusually high tolerance for alcohol because of a gene that allows us to metabolize ethanol 40 times faster than other primates. Still, y'all can use the information.



A quick Google search asking whether ants can get drunk reveals that the answer is a resounding "YES." Unfortunately, the first article is a Quora article written by ChatGPT, which of course we cannot simply accept as true... but we can quickly take a look at what ChatGPT says on the subject. Unfortunately, ChatGPT is a pussy who refuses to speculate on how much beer an elephant should drink to get drunk, because "I must emphasize that it is not appropriate, ethical, or responsible to give alcohol to animals, including elephants." So we will have to do the hard work ourselves.

But first back to the ants.

Can anybody tell me how much blood an ant has in their body? (They don't have blood, they have haemolymph but it's basically the same). Turns out it's a lot harder to calculate than expected, so here are some fun facts about ants and alcohol instead of a calculation.

- When given access to beer, wine and hard liquor, ants get drunk the most from wine. It is speculated that they taste the alcohol in the hard liquor and thus don't drink a lot from it as they know it's bad for them.
- Ants are more productive when drunk than sober! Or not really, but they are more productive when they drink water with 15% alcohol as opposed to only water, or water with 5% or 35% alcohol. This has all to do with the increased calorie intake from the alcohol. For those that are wondering why they are not even more productive when drinking from the 35% alcohol solution - it's because most of the ants died.

So long story short - no, you are not killing an ant by letting him drink your spilled beer. They might still have a hangover the next day. Who knows?

How about elephants?



Let's say an average adult African elephant weighs about 5,443 kilograms and has around 245 liters (=245 000 ml) of blood in him (thanks internet). An elephant would need  $1.5 * 2450 = 3675$  grams of alcohol for a blood alcohol level of 1.5. This comes down to 92 liters of beer or 13 liters of Jägermeister in a very short amount of time. However, elephants don't have that handy gene thingie that we humans have, so they become drunk way more easily! If you ever plan on getting drunk with an elephant, my advice would be to buy a nice keg of Gulden Draak for the elephant and a few bottles for yourself. Be careful however, as they might pass out on top of you.

Fruit bats on the other hand are a lot more capable drunks than elephants. It seems that a lifetime of eating fermented fruit helps build up that alcohol tolerance. Even with a BAC of 1.1 they are perfectly able to navigate through an obstacle course without colliding into walls, not being any slower or quicker than sober fruit bats.



Zebrafish react almost the same as humans when it comes to a little bit of alcohol. They swim faster and become bolder, less fearless and more aggressive when in the presence of a predator. They also show more signs of leadership, or maybe the sober fish just tend to follow the overconfident tipsy fish. However, they lose all their boldness once they go from tipsy (tank with 0.5% ethanol) to drunk (tank with 1% ethanol), become slower and generally lag behind. Maybe don't share a beer with your goldfish.



Fun fact: Goldfish can survive winters in frozen lakes by turning lactic acid in their bodies into alcohol, which they push out through their gills. If you put them in a beer glass and closed them off, it would take 200 days to get it up to 4%, but free alcohol is free alcohol.

Last but not least, let's talk about monkeys. Apes. Primates. A chimpanzee would probably be the best animal to have a beer with, but are they really able to hold their liquor? It appears they can! It turns out that chimpanzees in the wild are not opposed to drinking naturally fermented palm sap, or palm wine, from palm trees, sometimes even as much as the equivalent of a whole bottle of wine! So maybe it's not the best wild animal to have a beer with, but surely it won't say no to a nice bottle of sweet white wine.

Of course, all of this is theoretical. Please do not actually pour a beer in your fish tank or your dogs' water bowl.

#### *Other party animals*

- Tasmania has a problem with wallabies entering poppy fields, "getting as high as a kite and going around in circles," as these poppies contain opium.
- Reindeer in Siberia fight each other over the chance of eating the hallucinogenic Amanita muscaria mushroom. This was probably started by Siberian natives that would get high by feeding the fungi to the reindeer, then drinking the animal's urine.
- Cocaine Bear is a stupid movie that doesn't even really focus on the bear. The real bear was estimated to be dead in 30 to 45 minutes.

Please, do not feed cats your weed.