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Dr. Kanther and Dr. Davis Biology 110
23 October 2022

Scientific Communication Writing Assignment
My topic of choice is mold toxicity, specifically a mycotoxin known as penicillium. The

primary source article that I chose explores potential fungus-induced neurological diseases that are caused my an overabundance of penicillium. Penicillium represents a specific type of mold fungus that is commonly found in food and feed for domesticated livestock. For example, penicillium can be found in breads, fruits, cakes, and older meats. Penicillium buildup in organisms is responsible for causing a variety of healthy problems. Some new studies, highlighted in my primary source, suggest that penicillium can produce neurotoxins such as penitrem A.

This news article discusses research done by the Norwegian Veterinary Institute on 10 different dogs that had experienced reoccurring epilepsy episodes and overall unsual motor function behavior. Researchers were eventually able to reach a conclusion that these dogs had consumed an overabundance of pencicillium-contaminated foods. Scientists used mycological urine-testing on these 10 dogs in order to identify what mycotoxins were present in an overwhelming amount. The consumption of this fungus represented the biggest cause of the abnormal motor functions occuring in the dogs brains.

Pencicillium is responsible for causing potential brain malfunctions because of the behavior of the neurotoxin, penitrem A. Penitrem A is able to seep through the blood-brain barrier and therefore affect the makeup of varying substances in the brain. Additionally, penitrem

A has a direct connection to $GABA_A$ receptors in the brain. $GABA_A$ receptors are proteins that are essential for successful neurological function and cell stability within the brain. Therefore, penitrem A is capable of affecting certain parts of the brain which then has a cascading affect on other parts of the human or animal body. Penitrem A's can also produce a large amount of free radicals in animals which are responsible for damaging various tissues.

This topic is very fascinating to explore because it reveals the significance of detoxification. Various supplements, like activated charcoal, chlorella, and glutathione help to reduce inflammation and encourage the body to detox (Dr. Axe 2020). Mold toxicity is also fascinating because it can spark a variety of other chronic issues and diseases. For example, research has shown that mold toxicity worsenes preexisiting conditions and can inhibit treatment used for other diseases like Lyme Disease (Heffner, 2020). Overall, detoxification is an extremely important part of healing from these health issues.

Furthermore, this topic of discussion is something that has not been throughly explored by many doctors, especially in traditional medicine. According to my primary source, there is still a lot of research that needs to be conducted in order to understand the intricate effects of these substances on the brain. As a result of this, a large amount of individuals are currently struggling with various chronic neurological symptoms and are unable to get a diagnosis because not much is known about this type of toxicity. A significant amount of people may be affected by this issue and not even know.

Further research on this topic will allow scientists to understand more about the detoxification process and how significant mold toxicity is to human health and biology. Pencillium is one of the many mycotoxins that can contribute to unsual neurological, circulatory, respiratory, and reproductive issues.

References

Eliaz, I. (2020, October 22). *Clear trapped mold in your body, without overtaxing your kidneys & liver*. Dr. Axe. Retrieved October 23, 2022, from https://draxe.com/health/how-to-detox-your-body-from-mold-without-stressing-out-your-ki dneys-liver/

Holistic child psychiatry. (n.d.). Retrieved October 23, 2022, from https://www.holisticchildpsychiatry.com/wp-content/uploads/2020/03/Mold_Mycotoxin-Ill ness.pdf

Link to Primary Source: https://www.sciencedaily.com/releases/2011/12/111215094811.htm

*I chose this topic because I was recently diagnosed with chronic Lyme Disease and mold toxicity. Because of this diagnosis along with my interest in biology, I wanted to learn more about the science behind these increasingly prevalent diseases. In addition to understanding the effects of mold toxicity on humans, I also wanted to learn more about its affects on other organisms to observe the potential parallels.

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Scientific Communication Writing Assignment Rubric – Peer Evaluation

your name: Grace Trembath

assignment reviewed: 69 — Tiffany Mikulis

Using the rubric below, please evaluate each of your assigned news articles in each of the areas shown, filling out a separate evaluation form for each news article. Please highlight the part of the rubric text that explains why you chose a specific assessment

category. In the "General Feedback" section at the bottom of this form, please include more specific feedback, including things that you liked as well as things that you feel could be improved upon and suggestions on how to improve them.

	Excellent	Good	Needs Improvement
Content: **Does the news article convey the writer's understanding of a biological topic?**	The news article introduces a biological topic and clearly illustrates the writer's understanding of the topic including what is known and not known about it and how understanding the biology associated with the topic helps us understand larger issues or concepts.	The news article introduces a biological topic and presents information about it, but the topic is not explained clearly or doesn't distinguish between what is known vs. what is not known or doesn't explain how understanding the biology associated with the topic helps us understand larger issues or concepts.	The news article does not illustrate the writers understanding of the topic and does not indicate what is known vs. what is not known or how understanding the biology associated with the topic helps us understand larger issues or concepts.
Audience: **Is the writing appropriate for the target audience?**	The news article avoids jargon and clearly defines terms and ideas for a non-expert audience.	The news article defines or explains some terms, but some key terms or ideas would be challenging for a non-expert audience.	The news article lacks definitions and explanations, making the topic inaccessible to a non-expert audience.
Organization: **Is the news article clearly organized?**	The news article is well organized and easy to follow with good transitions between the paragraphs.	The news article is generally organized and easy to follow but conceptual connections aren't always clear.	The news article is disorganized, and the information presented doesn't flow well.

	Excellent	Good	Needs Improvement

Format, spelling & grammar: **Does the news article follow the recommended format and is it free of writing errors?**	The news article follows guidelines for paper length and format and has been carefully proofread for spelling and grammatical mistakes.	The news article is outside the recommended length or does not conform to the formatting guidelines; the news article contains a small number of spelling and/or grammatical errors.	The news article is significantly outside the recommended length and does not conform to the formatting guidelines; the news article contains numerous spelling and/or grammatical errors.
Citations: **Are the citations presented appropriately?**	The news article contains appropriate in-text citations and a list of references for all source material.	The news article is missing either appropriate in-text citations or a list of references.	The news article is missing appropriate in-text citations and a list of references OR citations are missing for one or more sources.
Rationale for choosing topic: **Did the writer indicate why they chose the topic?**	The rationale for choosing the topic is clearly explained.		No rationale for the topic's choice is provided.

General feedback (5 points):
Try to avoid first person pronouns, like "I chose…"
Also try to avoid referencing the articles, don't say "The primary source article" or "the news article"
There are also some typos throughout the article.

Overall assessment (excellent, good, needs improvement):
excellent, though there are some typos here and there