Brief teaching experience facing COVID-19

Breve experiencia docente ante el COVID-19

Erika Janet Zamora-Macorra, Universidad Autónoma Chapingo, Km 38.5, carretera México-Texcoco, Chapingo, Estado de México. CP 56230. Corresponding author: erikazam@gmail.com

Can a virus contained in a glacier "melt" and become a new threat to humanity?
Why a lot of people has been infected in my town if there is always a lot of sunlight in my home?
'You said that the "UV light" in the sun denatures the virus'
'What you said about the face mask is helping but it doesn't stop viral particles from coming through is true, because when my dad got COVID I used a mask all the time while I watched over him, and I still got sick.

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These questions and comments that genuinely arose in my remote classes with youngsters aged 15 to 18 showed me the impact of the pandemic on their way of thinking regarding a topic I have been explaining for years: **VIRUSES**. Now, these youngsters understood that answering the question they always had asked me every cycle (*Are viruses alive or dead?*) was irrelevant, and they focused on what really matters: How can something so small cause such an impact on the human lives? So, they understood that all tiny living beings, which they cannot see, are crucial to the balance of life and

Estas dudas y comentarios que genuinamente surgían en mis clases virtuales con jóvenes de 15 a 18 años me demostró el impacto de la pandemia en su forma de pensar respecto a un tema que varios años llevo explicando: Los **VIRUS**. Ahora los jóvenes comprendieron que no es relevante contestar la pregunta que en cada ciclo siempre me hacían *¿Los virus están vivos o muertos?*, y se centraron en lo que realmente importa: Como es que algo tan pequeño puede causar tanto impacto en la vida de los seres humanos. Con lo cual, comprendieron que todos los seres vivos diminutos, que ellos no ven, son fundamentales en el equilibrio de la vida y que nosotros tenemos la responsabilidad de impactar lo menos posible ese mundo microbiológico.

Me di cuenta que la pandemia ha despertado el interés en adolescentes, y probablemente en todas las personas, respecto a los virus. Desde el punto

we do have the responsibility of making the least possible impact on that microbiological world.

I realized that the pandemic had awoken interest in teenagers, and probably in all people, regarding viruses. From the agronomic point of view, I hope the minds of young men and women who are preparing to become future agronomists in Mexico, also become interested in phytopathogenic viruses, a somewhat forgotten area in the Mexican field. Thus, it is desirable for more virologists to be present to understand the role of these biological entities on an agricultural crop, in vectors and weeds. And maybe, in the mind of parasitologists would also be relevant to understand better the viruses, and the automatic approach for a plant with viruses on the field, not only would be eliminated them immediately.

As an agronomist/phytopathologist, I understood the importance of viruses on plants in the few years I have been studying them, and not only because they cause diseases, but I have often seen that viruses "have learned" to coexist with plants without causing great harm to them. In fact, I dare to guarantee that some even help their host to survive adverse situations, although it is easier to claim it than to prove it scientifically. The current knowledge of microorganisms in the biome of the plant will soon help us recognize beneficial viruses. The same surely happens in viruses that are able to infect humans, but because they are invisible, we have focused on those that harm us, leaving a large scientific omission that must be explored.

As an investigative professor, I explained to my worried and stressed students that we may have to accept that viruses are sometimes deadly, but sooner or later, with the help of scientists working on developing vaccines, this pandemic would pass. They then understood that, in order to survive this health crisis, they should better understand the viruses, know how and what they are made up of,

de vista agronómico, espero que la mente de jovencitos que se están preparando para ser futuros agrónomos en México, se interese por los virus fitopatógenos, un área de conocimiento un tanto abandonado en el campo mexicano. De esta manera, es deseable que haya más virólogos que ayuden a comprender el papel de estos entes biológicos en un cultivo agrícola, en vectores y en las arvenses. Seria trascendente que también se tuvieran un cambio en el enfoque automático del parasitólogo: una planta virosa en campo debe eliminarse de inmediato.

Como agrónoma/fitopatóloga comprendí la importancia que los virus tienen en las plantas con los breves años que llevo estudiándolos, y no solo porque causan enfermedades; sino porque he visto en muchas ocasiones que los virus "han aprendido" a convivir con las plantas sin causarles un gran daño. Es más, me atrevo a asegurar que inclusive algunos ayudan a su huésped a sobrevivir a condiciones adversas, aunque es más fácil postularlo que demostrarlo científicamente. El reconocimiento actual de la diversidad de microorganismos en el bioma de la planta pronto nos permitirá reconocer virus benéficos. Seguramente pasa lo mismo en virus capaces de infectar humanos, pero dado que son invisibles, nos hemos enfocado a los que nos causan daño, dejando una gran laguna científica que debe ser explorada.

Como profesora/investigadora, les expliqué a mis estudiantes preocupados y estresados, que habría que aceptar que a veces los virus son mortales pero que, tarde o temprano y con ayuda de los científicos dedicados al desarrollo de vacunas, esta pandemia pasaría. Ellos comprendieron entonces que para sobrevivir a esta crisis sanitaria es necesario entender mejor a los virus, conocer cómo y de qué están hechos, saber cómo se transmiten y cómo son capaces de utilizar células del huésped para replicarse y causar enfermedad. Así, podrían

how they are transmitted and how they can use the cells of their host to replicate and cause diseases. In this way they could make reasonable decisions that will benefit them and their families.

tomar decisiones razonadas que los beneficiarían a ellos y a sus familiares.