That is why

Why are chili peppers spicy?

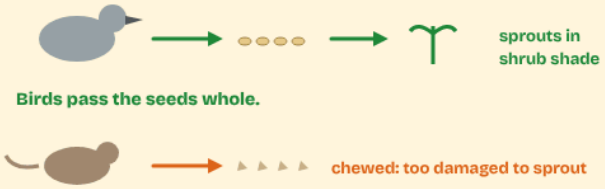
Capsaicin trips mammals' heat sensor but not birds', so birds spread the seeds; the heat also fights a seed-killing fungus.

A Who eats the fruit? (Arizona)

Wild chilies 35 miles south of Tucson

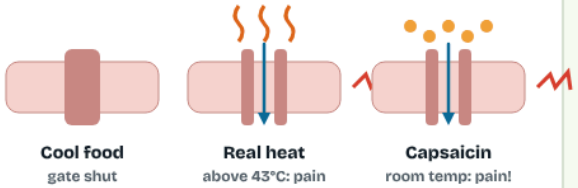


What happens to the seeds



B A false fire alarm

The TRPV1 heat gate on a pain nerve



A bird's gate



In chickens, swapping one building block (number 578) in the gate makes it react to chili.

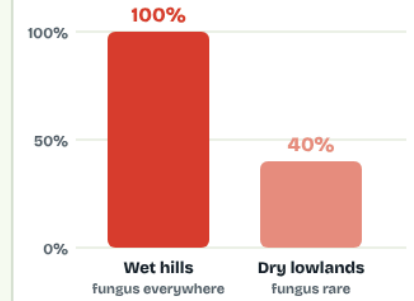
Found with chili itself

David Julius used capsaicin to find TRPV1: he searched millions of DNA fragments for the one gene that made cells react to chili. Nobel Prize in Physiology or Medicine, 2021.

C Fungus shield (Bolivia)

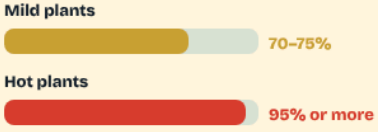
Plants making hot chilies

Fusarium enters through insect holes



The cost of heat

seeds lost in a drought test



Capsaicin shares its chemistry with seed-coat armor, so hot seeds get thinner coats, and ants eat more of them.

A fire alarm with no fire: loud for mammals, silent for birds.

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