

Virus-triggered seed dormancy control.

Seeds allow plants to colonize new places, by traveling long distances. But seeds can also travel in time. A special state, called seed dormancy, enables plants to postpone their germination despite favourable conditions. In agriculture, dormancy is also an important seed trait as it is responsible for example for seed germination synchrony. We've discovered that virus attack on mother plant can modify the dormancy of produced seeds. Plant viruses are powerful pathogens that can kill or reduce the growth of plants. Some of the plant viruses travel from the site of infection to seeds and thus propagate themselves to the next generation. Apparently, viruses also change the properties of seeds. In this proposal, we will explore the mechanism behind this effect, its specificity regarding different hosts and pathogens, and test its evolutionary potential. While this is a basic research project, studies of the virus effect on seed biology are important as virus seed transmission is a challenge to agriculture that has not been explored extensively.