

**Hybrids of grapevine mildew and oak disease are not able to infect banana trees in South American rainforests**

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Today, plants are important. But diseases of plants are also important. Two of these diseases are important. The first one is grapevine mildew. It is important because of the grapevine's economic importance all over the globe but particularly in grapevine producing countries. The second one is the oak disease, which affects oaks. In this study we looked at what happens when we cross the grapevine mildew with the oak disease. We took 50 grapevine mildews isolates and crossed them with 30 oak disease isolates. Surprisingly, none of the isolates was able to fertilize other isolates. When BET was added into the fertilizing mix, all isolates appeared to die. We then took 15 grapevine mildew isolates and 15 oak disease isolates and put them into some banana trees

in South American rainforests. Surprisingly, the banana trees did not appear to be affected by the isolates ; however, when grew in darkness, the grapevine mildew appears to be able to evolve into a fungi which can grow into the soil. Our results show that, overall, no phylogenetic connection or « evolutionary bridge » exist between the grapevine, the oaks, and the banana trees, and between their associated pathogenic fungi. However, a host jump from banana tree to other monocotyledon crops, such as tobacco, is still possible as not much is still known about the evolutionary biology of fungi, and should be investigated further.

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