

EFFECT OF SALINITY ON VIRAL DISEASE SPREAD IN PLANTS

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Salt stress is an important factor affecting the quality and quantity of crop yields. The total area of the world's land exposed salinity increased to 15% in 2011 compared to 7% in 2001. In addition, crops are susceptible to disease, which strongly affects the yield. Thus, viral diseases reduce crop yield, sometimes up to 80-100%, for example Eggplant mottled crinkle virus (EMCV) can infect up to 100% yield of eggplant. Taken together, these two stress factors can cause enormous economic damage to agriculture. Despite of the importance, the effect of salinity on plant virus disease has not been well studied.

In our study, we investigated the effect of high concentrations of salt (150mM NaCl) on the systemic viral disease caused by EMCV. The virus causes the systemic necrosis in *Nicotiana benthamiana*. Systemic accumulation of virus at high concentrations of NaCl was drastically reduced. In the plants exposed to salt stress (100mM and 150mM NaCl) for 21 days before infection systemic symptoms were significantly delayed. The relationship between plant responses to biotic and abiotic stress factors may indicate the existence of universal defensive pathways of plant adaptation to unfavorable conditions.