



Identifikacija virusa stebelnih nekroz krizantem - CSNV v Sloveniji

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Med najpomembnejše viruse, ki okužujejo krizanteme sodijo *Tomato aspermy virus* (TAV), *Chrysanthemum virus B* (CVB) in tospovirusi ter viroid *Chrysanthemum stunt viroid* (ChSVd). Njihovo določanje z laboratorijskimi metodami je predpisano v EPPO certifikacijski shemi za krizanteme. Na krizantemah so bili do sedaj odkriti trije tospovirusi: *Tomato spotted wilt virus* (TSWV) in *Impatiens necrotic spot virus* (INSV), ki sta splošno razširjena, ter *Chrysanthemum stem necrotic virus* (CSNV), ki so ga našli v Braziliji, v Evropi pa le kot posamične okužbe na Nizozemskem. TSWV in INSV sta uvrščena na slovenski listi II/II, medtem, ko se CSNV nahaja na EPPO čakalni listi.

Tospovirusi se prenašajo z resarji in sadilnim materialom. Najpogostejša bolezenska znamenja so nekroze listov, včasih tudi stebel in cvetov. Včasih opazimo tudi značilna bolezenska znamenja v obliki koncentričnih obročev. Na podlagi bolezenskih znamenj tospovirusov med seboj ne moremo ločiti. V Sloveniji smo večkrat, odkar poteka posebni nadzor tospovirusov, ki ga vrši uradna služba za varstvo rastlin, laboratorijsko dokazali TSWV in INSV. Prvi sum na okužbo s CSNV pa se je pojavil šele v letu 2001. Ugotovili smo navzkrižno reaktivnost virusa CSNV s protitelesi proti TSWV, kar pomeni, da je pri krizantemah možno zamenjati okužbo s CSNV z okužbo s TSWV. To je tudi ena od možnih razlag, da o CSNV ni poročil iz drugih evropskih držav. Za identifikacijo CSNV smo poleg ELISA testa uporabili tudi različne testne rastline ter verižno reakcijo s polimerazo (PCR). Virus smo izolirali in določili delno nukleotidno zaporedje izbranega gena, na podlagi katerega smo dokazali njegovo identiteto.

Tospovirusi se v krizantemah običajno nahajajo v nizkih koncentracijah, možne so tudi latentne okužbe. Dokazali smo jih v listih, steblih in koreninah krizantem. V letu 2002 pa smo CSNV dokazali tudi v gerberi.

ABSTRACT

Identification of *Chrysanthemum stem necrosis virus* - CSNV in Slovenia

The most important viruses infecting chrysanthemums are: *Tomato aspermy virus* (TAV), *Chrysanthemum virus B* (CVB) and tospoviruses, as well as the viroid *Chrysanthemum stunt viroid* (ChSVd). Their detection is described in EPPO certification scheme for chrysanthemum plants. Three different tospoviruses were described in chrysanthemum plants: *Tomato spotted wilt virus* (TSWV) and *Impatiens necrotic spot virus* (INSV), which are both commonly present, and *Chrysanthemum stem necrotic virus* (CSNV), which was apart from Brasil found in Europe only in few cases in the Netherlands. TSWV and INSV are listed in II/II, while CSNV is listed in EPPO alert list.

Tospoviruses are transmitted by thrips and planting material. Most commonly observed symptoms are necrosis on leaves, rarely on stems or flowers. Sometimes typical concentric

rings are present. Notably, it is not possible to distinguish among individual tospoviruses based on their symptoms. In the frame of monitoring performed by plant protection services in Slovenia, TSWV and INSV were found regularly, while first suspect of finding the CSNV occurred in 2001. A closer study showed that CSNV cross reacts with antisera against TSWV. These results may indicate that it is possible to confuse CSNV infections with the TSWV infections. However, this is to be taken with caution as only one of the possible explanations, since CSNV was not reported from other European countries. Apart from ELISA, different test plants and PCR were used for CSNV detection and identification. We isolated the virus and sequenced a selected gene to further support the evidence on CSNV identity in our samples. Tospoviruses are present in chrysanthemums in low titers, but we were able to detect them also as latent infections. Beside in chrysanthemum leaves, we detected CSNV also in stems and roots. In 2002 we detected CSNV also in Gerbera.