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Trichothecene chemotypes of *Fusarium graminearum* species complex in Serbia

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Summary

The species *Fusarium graminearum* represents one of the most economically important factor that threaten agricultural production in the world. In addition to affecting yield reduction and grain quality, this species is of great importance due to its ability to synthesize mycotoxins. Knowing the toxicological profile of *F. graminearum* species is essential for agriculture and food industry, because trichothecene chemotypes (NIV, 3ADON, 15ADON) have different toxicological properties that directly affect human and animal health. In this study, 20 isolates of *F. graminearum* originating from maize and wheat were examined. DNA isolation was performed from the mycelium of the fungus using the commercial kit Dneasy Plant Mini Kit according to the manufacturer's instructions. Chemotype detection was performed using two sets of specific primers (TRI3 and TRI12) designed for trichothecenes by Ward *et al.* in 2002. After the polymerase chain reaction was completed, the products were electrophoretically separated on a 1% agarose gel, and visualization was performed by staining with ethidium bromide and observing under UV light. Amplified fragments were read visually, and a positive reaction indicated the presence of DNA fragment of the expected size. All isolates of *F. graminearum* examined in this study had products of size 610bp at TRI3 and 670bp at TRI12, which indicates that isolates originating from Serbia belonged to 15ADON chemotype.

Keywords: mycotoxins, NIV, 3ADON, 15ADON