**English Title**

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This research was aimed to establish rapid analysis technique for the determination of nitrate (NO3-) concentration in the leaves of paprika, which has key role for the stable vegetative and reproductive growth. Leaf petiole and blade sap of two paprika cultivars (‘Raon red’ and ‘Raon yellow’) were used for the determination of NO3- concentration, separately using rapid detection kit (RQ-flex) and spectroscopy quantification methods. In addition, two paprika cultivars namely, ‘Nicole’ and ‘TP2001’ were used to determine the status of NO3- concentration in leaf of each fruiting group. NO3- concentration in leaf blade sap and the content in leaf showed significant correlation (*R*2 = 0.8628), analysed by RQ-flex and spectroscopy methods, respectively. Furthermore, leaf petiole sap and the content in leaf also showed significant correlation (*R*2=0.6734) but the relationship was poor compared to leaf blade sap and the leaf content. NO3- concentration in petiole sap decreased in all the cultivars from early to late fruiting group. The higher concentration in the lower leaves and the continuous decrease towards the upper leaves in the both years were found through the analysis of NO3- concentration in different leaf position. In addition, daily short-term fluctuation of NO3- in petiole sap could be rapidly monitored. These results showed that long-term or short-term monitoring by test strip-based rapid analysis technique might be useful tool for the diagnosis of nutritional status for the stable of nutritional management in paprika. This study provided the potential utilization of rapid detection kit for quality paprika production with nutrient solution culture.

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