

## D-D4-29

### The effects of environmental factors on isoflavone composition and concentrations in soybean grown from tropical regions

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The objectives of this study were to compare and determine the isoflavone composition and concentrations of soybean varieties grown from different cultivated regions, the lowland and upland of Vietnam. Their total and individual isoflavone composition and concentrations were qualified by high-performance liquid chromatography (HPLC). Total isoflavone concentrations varied from 1153.25  $\mu\text{g g}^{-1}$  to 6604.09  $\mu\text{g g}^{-1}$  and averaged 3353.75  $\mu\text{g g}^{-1}$  across environmental factors and varieties. In lowland, the total isoflavone concentrations ranged from 1153.25  $\mu\text{g g}^{-1}$  in VX9-3 to 5653.16  $\mu\text{g g}^{-1}$  in M103, whereas in upland the lowest isoflavone concentration was DT93 (1938.26  $\mu\text{g g}^{-1}$ ) and the highest was M103 (6604.09  $\mu\text{g g}^{-1}$ ). The total average isoflavone concentration of soybean varieties in upland (3727.92  $\mu\text{g g}^{-1}$ ) was higher than were in the lowland. Total and individual isoflavone composition and concentrations were significantly affected by environmental factors and varieties sources. Despite significant varieties  $\times$  cultivated regions, varieties with consistently high (M103) and low (VX9-3, DT93) isoflavone concentrations were identified. The data about isoflavone composition and concentration in Vietnamese soybean varieties are reported for the first time, and revealed a large variation in isoflavone composition and concentration across varieties and regions.

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### 미생물제 *Bacillus subtilis* QST713의 인삼 점무늬병의 방제 효과

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미생물제(*Bacillus subtilis* QST713)의 단독처리, 미생물제와 화학약제의 혼합처리, 미생물제와 화학약제의 교호처리에 의한 인삼점무늬병의 방제효과를 검정하였다. 미생물제 단독으로 처리할 경우 미생물제와 화학약제의 약효는 모두 80%이상으로 유사한 효과가 있었다. 미생물제와 화학약제를 혼합하여 처리했을 때의 방제가는 미생물제와 Azoxystrobin 및 Mancozeb의 혼합처리구에서 80% 이상으로 방제효과가 매우 우수하였으나 Difenconazole, Kresoxim-methyl, Copper sulfate basic, Chlorothalonil · Copper sulfate basic의 혼합처리에서는 방제가가 61.1%~76.4%로 약간 감소하였다. 미생물제와 화학약제를 교호적으로 처리했을 때, 충남대학교 인삼 포장 처리구에서는 미생물제와 Copper sulfate basic의 교호처리 방제가가 80% 이상으로 방제효과가 우수하였고 다른 약제와의 교호처리의 방제가는 감소하였다. 그러나 전북 진안 인삼 포장에서는 미생물제와 모든 화학약제와의 교호처리의 방제가는 90% 내외의 높은 방제효과를 보였다.

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