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Changing contents of phenolic compounds according to water stress and inoculation treatments in *Rehmannia glutinosa*(GAERTNER) LIBOSHITZ

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Objectives

The objective of this study is to examine the relationship between some environmental treatments such as water stress and inoculation and changing contents of phenolic compounds in *Rehmannia glutinosa*(GAERTNER) LIBOSHITZ.

Materials and Methods

○ Materials

- *Rehmannia glutinosa*(GAERTNER) LIBOSHITZ (Kangwon National Univ.)

○ Treatments

1. Water treatment
   - frequency : twice per day and once of two days
   - duration : 7 days and 14 days
2. Inoculation : *Fusarium oxysporum* R-10 and *Phytophthora inferstane*

○ Analysis method

- column : YMC-Pack ODS AM-303 (4.6 × 250mm I.D.)
- Solvent A : 98% H_2O + 2% glacial acetic acid in 0.018M ammonium acetate
- Solvent B : 70% solvent A + 30% organic solvent
  (organic solvent : 82% methanol + 16% *n*-butanol + 2% glacial acetic acid)
- Wave length : UV 280 nm

Results and Discussion

- Changing total contents of phenolic compounds varied from water treatments that plants were supplied water stress in once of two days showed considerable variation range and appearance compare with plants in twice per day in shoot. On the contrary, contents of phenolic compounds of root decreased by water deficiency in similar shape, no relation to frequency and duration of water treatment.

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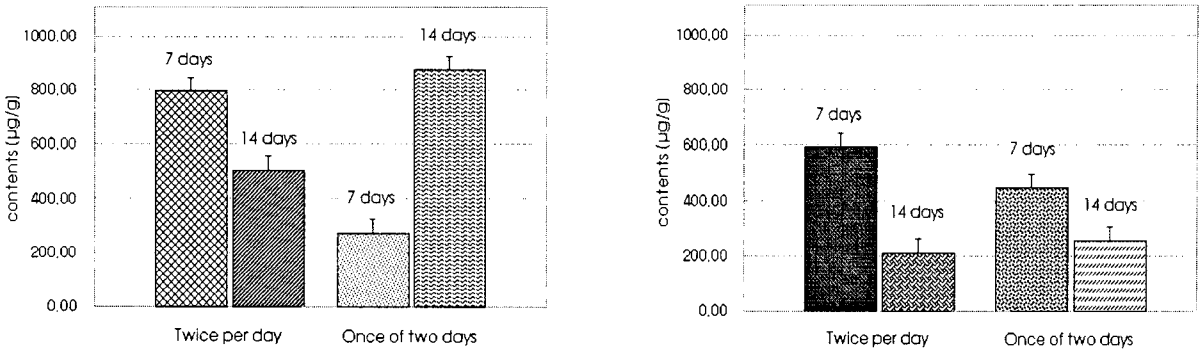
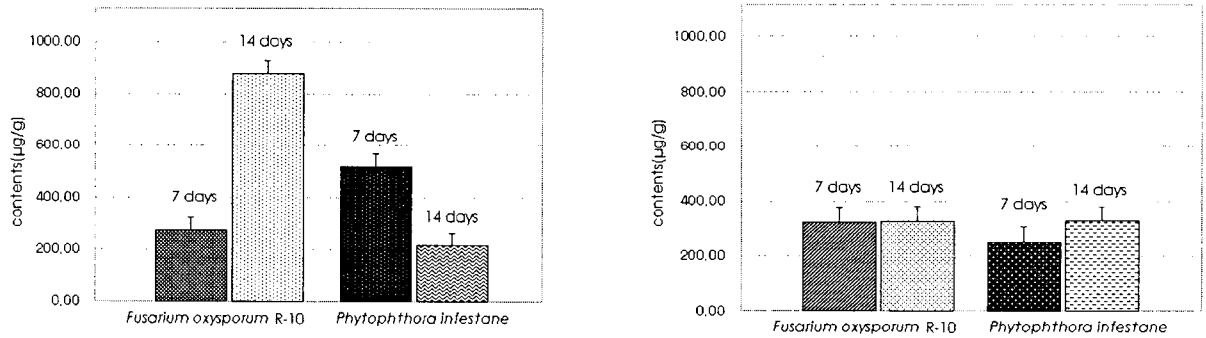
- Result of inoculation of *Fusarium oxysporum* R-10, total contents of compounds were higher in 7 days than 14 days in shoot but plants were inoculated *Phytophthora inferstane* didn't have a significantly changing of total contents of phenolic compounds.



(a) shoot (b) Root

Figure 1. Comparison of contents of total phenolic compounds with frequency and duration of water treatments in shoot(left) and root(right).



(a) shoot (b) Root

Figure 2. Comparison of contents of total phenolic compounds with inoculation of *Fusarium oxysporum* R-10 and *Phytophthora infestane* in shoot(left) and root(right)