

**Effect of ultra-sonication treatment for seed priming to accelerate germination and stability**Dong-Min Kim<sup>1\*</sup>, Hye-Jung<sup>1</sup>, Dong-Sun Kim<sup>1</sup>, Seung-In Yi<sup>1</sup><sup>1</sup>Seed testing & research center, Korea seed & variety service, Gimcheon, Republic of Korea**[서론]**

Many invigoration treatments of seeds, referred to as seed priming, have been used to increase and/or accelerate germination, as, for example, the addition of chemicals, plant hormones or by controlled hydration. The addition of gibberellic acid is probably the most effective method, but is time consuming and relatively expensive. Other chemical methods may add undesirable residues to the culture. Germination may also be stimulated by physical methods as, for example, heat treatments, ionizing radiation or vacuum.

**[재료 및 방법]**

In this study, the influence of ultrasonic stimulation was investigated on the germination and storability of seed for *Raparus sativus*, *Brassica oleracea*, and *Brassica compestris*. All experiments have been performed using a various frequency of ultrasonic stimulation in range between 14.3 and 22.8kHz at constant temperature (25 °C). Ultrasonic treatment and non-treatment seeds were stored in various conditions(Packing materials: burlap bag, aluminum polybag, polyethylene bottles, Temperatuer: ambient, 15°C/RH40%, 5°C/RH30%) for twelve months and evaluation of storability was carried out to confirm the effect of ultrasonic treatment as seed priming.

**[결과 및 고찰]**

A significant increase in the accelerated germination was identified after ultrasonic stimulation. Results seem that ultrasonic stimulation application of higher frequency than lower frequency is the more effective in the three crops(not significant among the treatments). In case of *Raparus sativus*, ultrasonic treatment seed showed accelerated germination than non treatment in all condition after six months storage. Even twelve after storage, there is no significant difference between non-treatment and treatment in seed vigour and storability in specific conditions(Temp: 5°C, Packing material: all materials). These results seem to indicate that ultrasonic stimulation treatment can be used as economical and eco-friendly seed priming method. The further results will be discussed.

**[사사]**

This work was supported by Korea Institute of Planning and Evaluation for Technology in Food, Agriculture, Forestry and Fisheries, Republic of Korea(Project No. 316011-05).

\*Corresponding author: Tel. +82-54-912-0222, E-mail. acekdm@korea.kr