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## Exploring the Germination Potential of GM Maize under Natural Condition

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### [Introduction]

Maize is widely cultivated as one of the world's three largest crop because it is easy cultivate and excellent not only food but also as feed for livestock. The development and use of genetically modified (GM) maize is increasing to increase feed production. In Korea, maize for feed is mainly imported from foreign countries. When released into the environment, GM crops are becoming a social problem because of concerns about gene transfer to related species. On the other hand, due to the unintentional releases of GM feed from the imported port to the destination, such as down grain and neglect, native organisms of GM maize for feed have been found in places such as import ports, transfer roads, farm roads, and factories.

### [Materials and Methods]

In this experiment, Daihakchal, Gwangpyeongok and Nonghyup maize feed were used. The experiment was conducted at Gunwi, and 75 kg of maize feed was directly sown in a 603.5 m<sup>2</sup> field to make the environment similar to that of down grain to confirm the germination of down grain maize. In addition, in order to check the lowest germination rate of maize, germination rate tests are conducted at 10, 20, 30, and 40°C. To predict the lifespan of maize through the dormancy rate, 3 repetitions of 100 grains per cultivars are performed in each region (Daegu-35 ° 53'40.88"N 128 ° 36'47.34"E, Gunwi-36 ° 6'41.54"N 128 ° 38'26.17"E, Jeonju-35 ° 49'53.33"N 127 ° 03'50.15"E) soil. After burying them at a depth of 5 cm, they were taken out at intervals of 1 month to examine the germination rate, dormancy rate, and soil moisture around the seeds.

### [Results and Discussion]

The germination rate of maize in Gunwi 28 seeds were germinated of 75 kg maize feed. The germination rate indicated as 0.131 % based on a 100 seed weight. *In vitro*, it was observed that as the temperature decreased, the germination power decreased and there was no significant differences between the germination rate and dormancy rate of the buried seeds by regional groups. these data can be used as a basis for controlling the unintentional release of maize.

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