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Super absorbent polymer seed coatings promote seed germination and seedling growth of *Caragana korshinskii* in drought





Key words: **super absorbent polymer, seed coating, Caragana korshinskii, seed germination, seedling, drought**

Research Summary

Object: To investigate the effects of super absorbent polymers (SAPs) coatings on *Caragana korshinskii* seed germination and seedling growth under drought conditions.

Conclusions:

- SAP coatings improve *C. korshinskii* seed germination and seedling growth in drought.
- SAP coatings reduce cell membrane damage and ROS accumulation caused by drought in germinating seeds.
- SAP D coating increases seedling survival in Mu Us Sandy Land.
- The efficiency of SAP coating is positively correlated with its water absorption capacity.
- The efficiency of five SAP coatings are in the sequence D> E> B> A> C.

JZUS-B

Research Summary

Significance: Our results are expected to be helpful in understanding and utilizing SAP seed coatings in improving plant survival under drought conditions.

Innovation points:

- The effects of SAP coatings on *C. korshinskii* growth were explored in both experimental environment and sandy land in China.
- In addition to general individual phenotype, biochemical changes in germinating seeds were also detected and analyzed.
- The relationship between the effects of SAP coatings and their water asorbance capacity was revealed.



