

## PELLETED SEED: PROS AND CONS

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This poster dealt with the influence of various pelleting methods on the germination of black spruce (*Picea mariana* [Mill.] B.S.P.) and jack pine (*Pinus banksiana* Lamb.) seeds, and discussed some of the advantages and disadvantages of pelleted seed.

Germination of various experimental and commercially available pellet types was compared to that of untreated black spruce seed under optimum incubator conditions at 21 °C. The Moran pellet, produced in California, gave the best results and is probably the most readily available commercially produced pellet. All other pellet types had comparable results after 28 days, except for FMC encapsulation which severely reduced germination, viz:

Type of pellet	Mean cumulative germination percent at 7 and 28 days from sowing	
	7 days	28 days
Untreated control	92	99
Moran	23	98
Asgrow	3	96
Cornell	0	97
GLFRC	0	94
FMC	0	52

The main advantage of pelleted seed is in its ease of handling. Its uniform size and shape make it well suited for vacuum seeding of container stock and eliminate the problem of missing or multiple seeds. Because the size of the pellet can be altered to match the calibration required, accuracy in direct seeding can also be greatly increased. The increased weight of the pellet compared to that of naked seed makes aerial seeding under higher wind velocities more feasible with less chance of drift.

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Additives to the seed coat are still at the experimental stage. The Asgrow Seed Company is able to incorporate several additives into its coating medium (e.g., fungicides, herbicides, fertilizers and rodenticides) which will protect or enhance germination and development. Experimental work aimed at delaying germination to facilitate later summer seeding is now under way. This involves plasticizing the pellet, thereby making it impermeable to moisture but subject to fission by frost during the winter, allowing germination the following spring. Storage had no toxic effects on Moran coated black spruce seed after a three-year storage period.

However, pelleting does have a significantly adverse effect on the rate of germination at the extreme cardinal temperatures of 10 °C and 32 °C. This may severely hamper its potential for direct seeding since field conditions are rarely optimal, but it should not interfere with greenhouse production where optimum temperatures are maintained.

Another disadvantage is additional cost. The present cost of pelleting one million black spruce seeds with the Moran coat is \$150.00.

A major disadvantage of pelleting is its poor germination response with species other than black spruce, e.g., jack pine, red pine (*Pinus resinosa* Ait.) and white spruce (*Picea glauca* [Moench] Voss). These species are not recommended for pelleting unless a watering regime is adopted which will remove the pellet coat soon after sowing and reduce any inhibiting effects on germination.

It is concluded that Moran coat pelleting of black spruce seed is an acceptable practice without any adverse effect on germination where optimum conditions can be maintained. It also warrants serious consideration in direct seeding if the potential advantages outweigh the likelihood of delayed and/or depressed germination and if provision is made to counteract these adverse effects.