

## **Seed Use Efficiency Meeting**

Langley, BC July 30 & 31, 2008

**Yousry A. El-Kassaby**

Faculty of Forestry, University of British Columbia,  
Vancouver, B.C. V6T 1Z4 Canada

### **Seed Use Efficiency: From the Forest to the Forest**

---

Seed utilization is viewed as integral component of an inter-connected tree improvement delivery system. Investigating any component of the system, such as seed utilization, must be viewed holistically (i.e., it cannot be determined or explained by its component parts alone; instead, the system as a whole determines in an important way how the parts behave). Thus, efficient seed utilization is affected by the phenotypic selection of superior individuals forming the breeding population; the intricacies of breeding → testing → genotypic selection of production populations' (seed orchards) parents; seed crop management practices (cone harvesting, processing, seed handling, storage and pre-treatments; and ends with the production of seedlings for reforestation). Changes in genetic gain and diversity were monitored throughout the system, indicating that the interaction between genetics (the magnitude of genetic control over reproductive phenology and output, germination speed, dormancy and aging) and management practices (e.g., individual vs. bulk seed harvesting, single vs. multiple sowing) could impart significant unintentional directional selection where genetic gain and diversity could be drastically affected.