Seed Use Efficiency

July 30+31, 2008 onwards
Langley, BC

Thank you to Forests For Tomorrow (FFT)

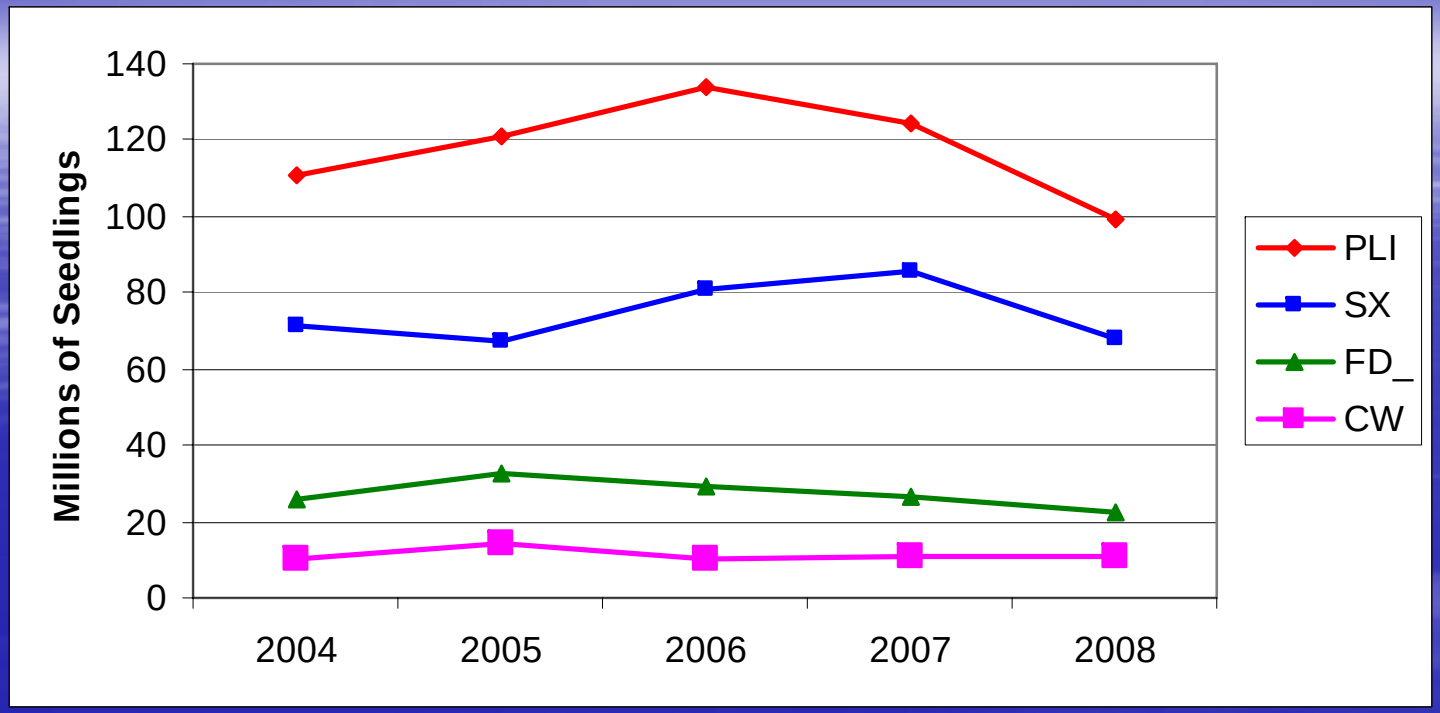
Objectives

- To promote activities to increase Seed Use Efficiency
- To provide a dedicated forum for the exchange of information spanning the entire Seed Handling System
- To better understand each others business', the drivers and bottlenecks (financial + biological)

- You are part of the Seed Use Efficiency Task Force

- To celebrate the Tree Seed Centres 50th B-day

Seed Use – Big Four



2008

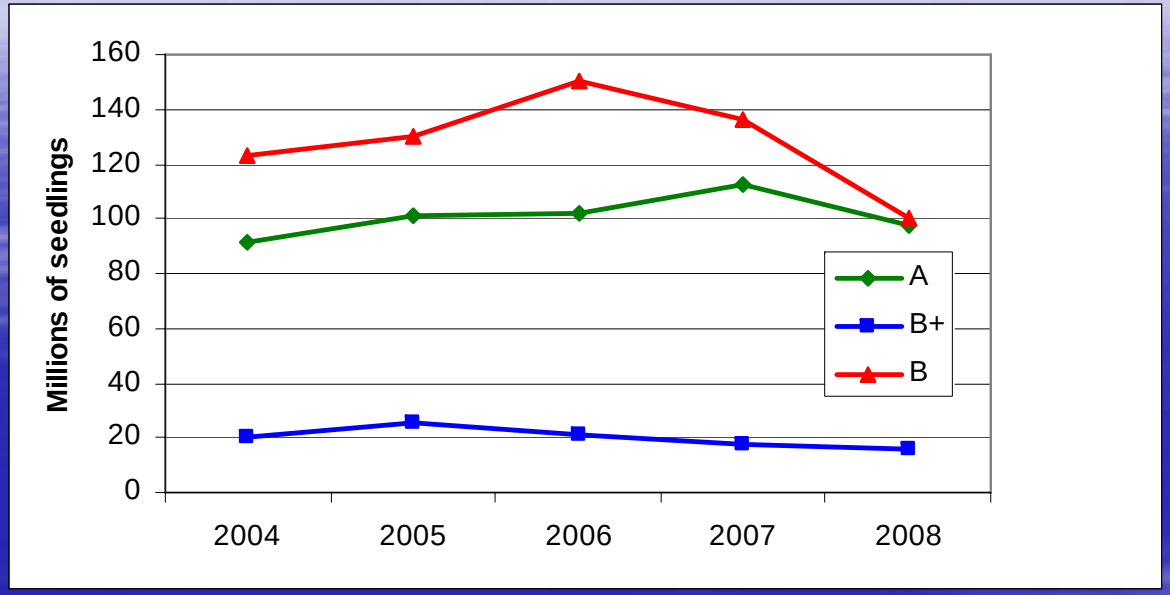
214M Total = 15 year mean / 265 M in 2007

Pli + Sx = 78% of sowing

Pli + Sx + Fd + Cw = 93% of sowing

where is our reforestation diversity?

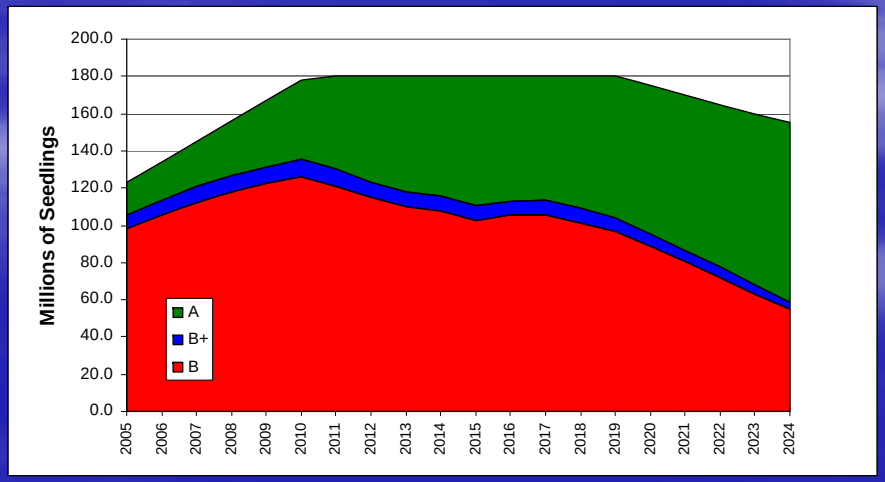
Use by Genetic Class



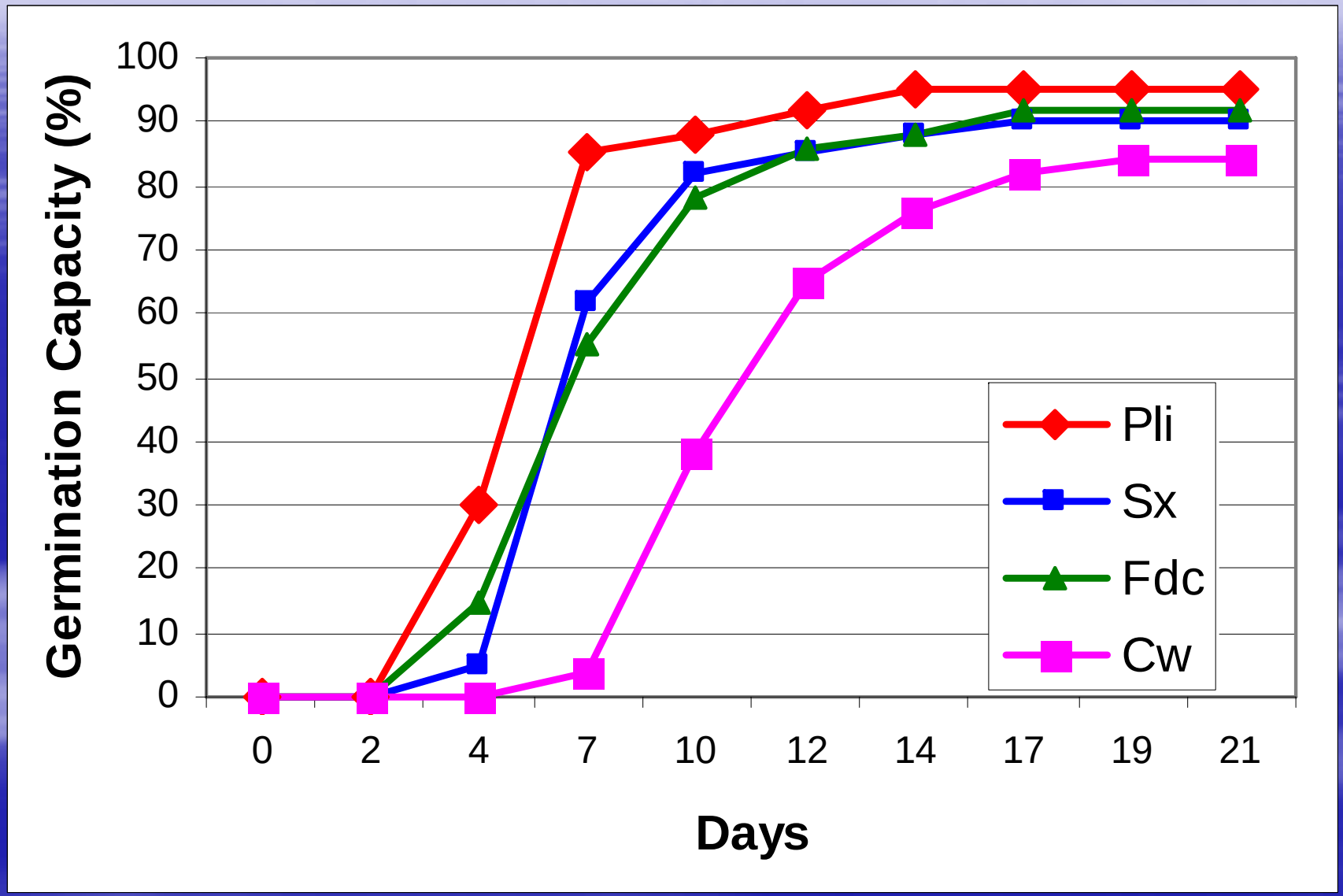
- A class seed currently 46% of sowing (2008)
- A and B+ class seed currently 93% of sowing (2008)

A little Pli on your mind

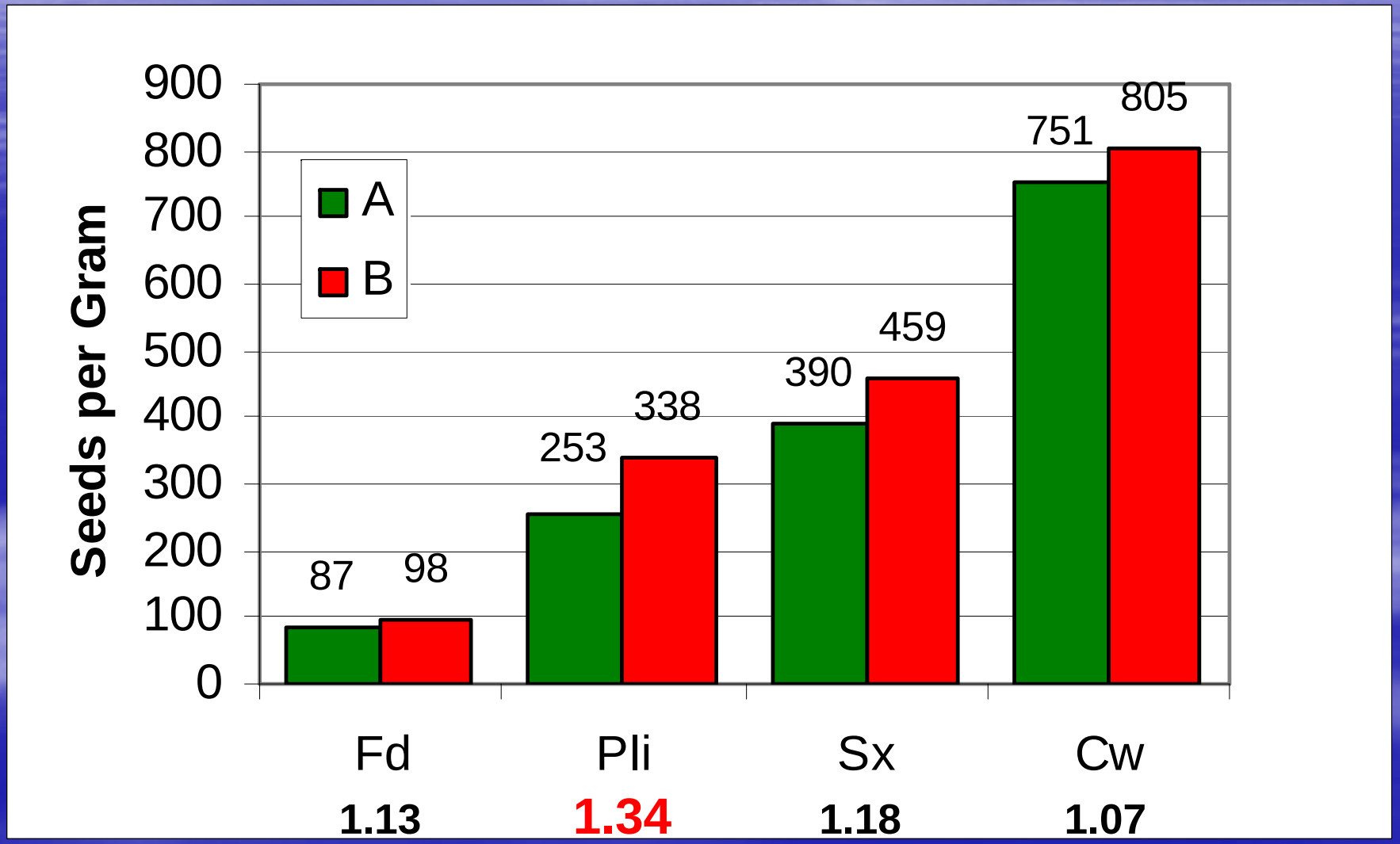
- Pli Natural stand seed used well into the future
- Pli orchard future looks brighter
- Production to 50 M by 2012
- On-course or slightly ahead!



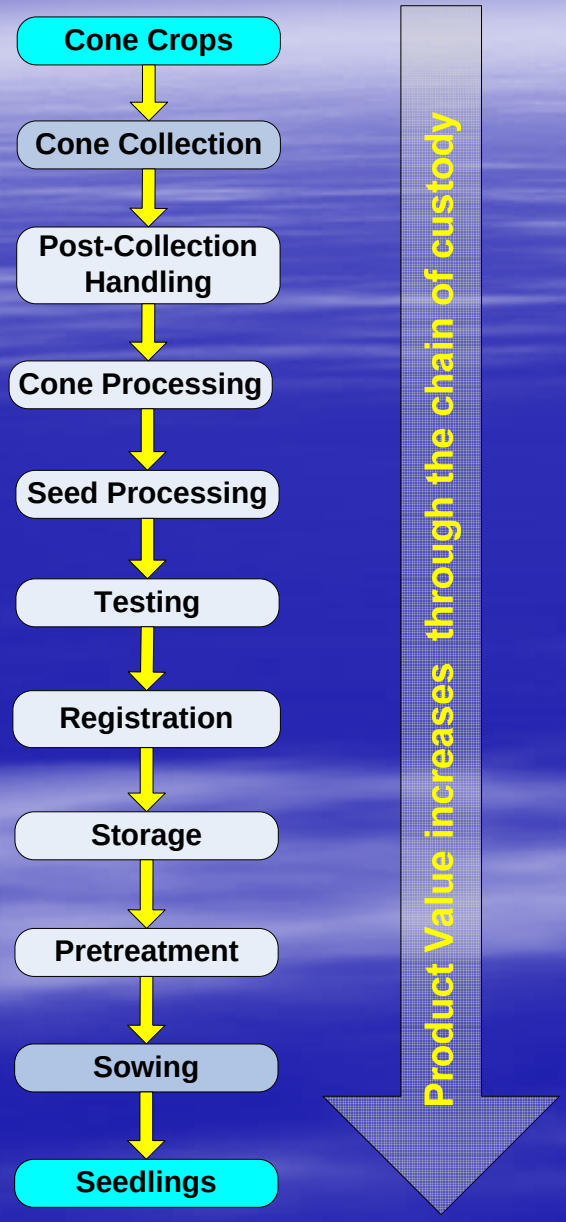
Germination Curve Comparison



Seeds per Gram

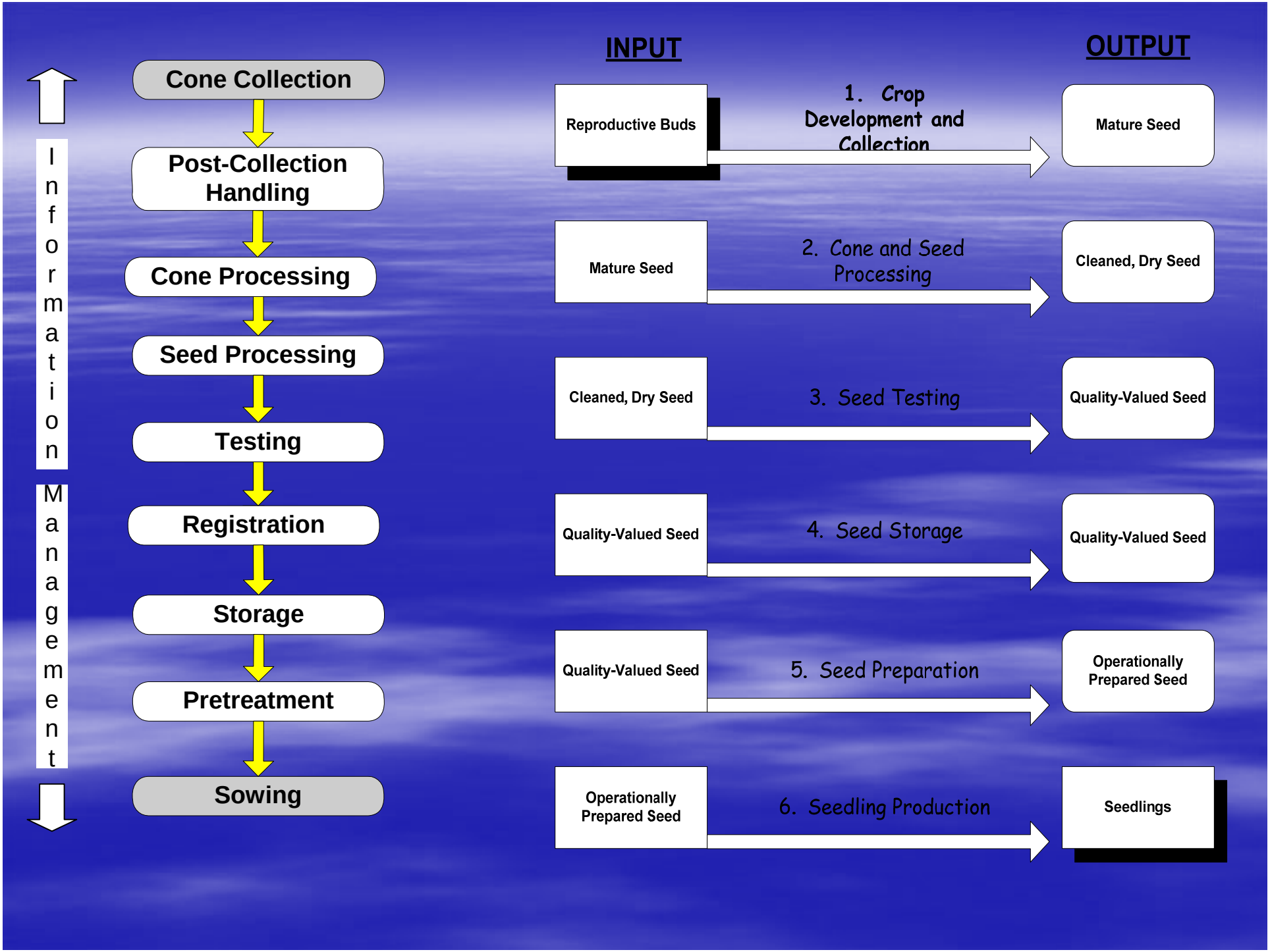


Scope = Seed Handling System



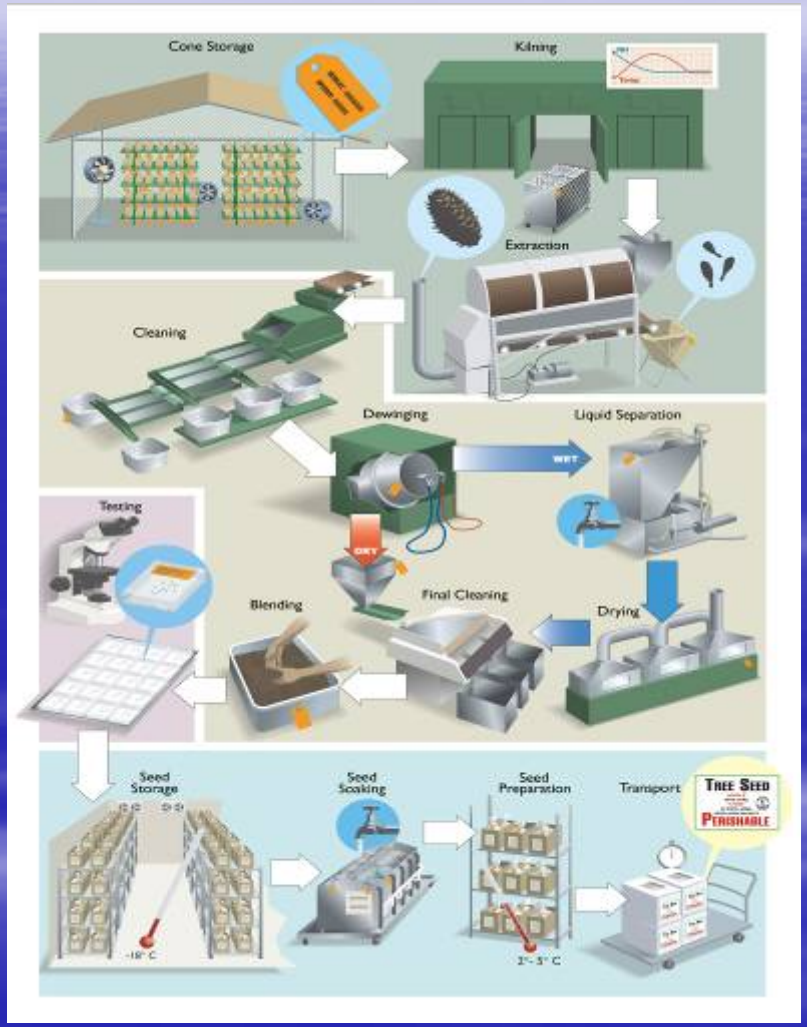
- All activities from cone collection *cone crop induction* to sowing
- Any previous "Link" can impact your product – *due diligence*
- We are all part of this chain-of–custody together

- Conifers are incredibly variable organisms
- "complicates" direct adoption of many agricultural techniques
  - **Variety specific treatments**
- Reduce production variability (Material handling system), but maintain genetic diversity – that's the challenge


Information Management
Cone Collection
Post-Collection Handling
Cone Processing
Seed Processing
Testing
Registration
Storage
Pretreatment
Sowing
INPUT
OUTPUT
Reproductive Buds
1. Crop Development and Collection
Mature Seed
Mature Seed
2. Cone and Seed Processing
Cleaned, Dry Seed
Cleaned, Dry Seed
3. Seed Testing
Quality-Valued Seed
Quality-Valued Seed
4. Seed Storage
Quality-Valued Seed
Quality-Valued Seed
5. Seed Preparation
Operationally Prepared Seed
Operationally Prepared Seed
6. Seedling Production
Seedlings

Information Management

- Cone Collection
- Post-Collection Handling
- Cone Processing
- Seed Processing
- Testing
- Registration
- Storage
- Pretreatment
- Sowing

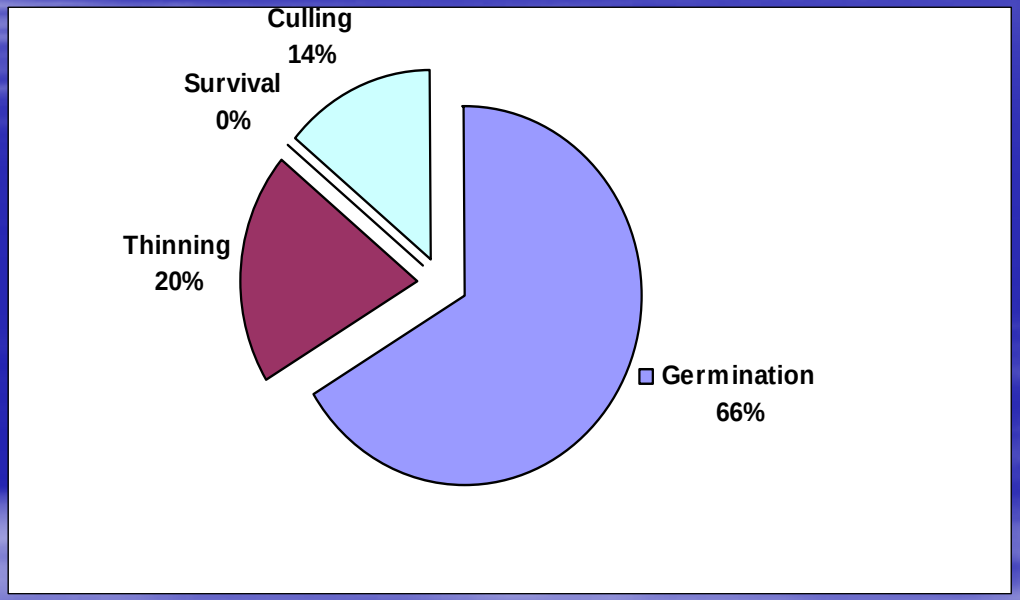


Observation – there is an incredible amount of data collection in seed orchards, processing facilities and nurseries that never gets utilized?

- Weather station data (understanding reproductive biology)
- Processing Yields (species benchmarks at each stage?)
- Nursery recoveries (largest contributing factors?)

- Statistical expertise often exclusive realm of scientists (Big mistake)
  - Operational databases offered very little ‘assistance’ or incentive to increase knowledge on a subject
  - Sample sizes are an incredible asset

- How ‘tight’ is the system?
  - *continuous improvement*
- Where are the largest source(s) of variability?
  Efficiency Bottlenecks



Path Analysis

- Statistical method of evaluating strength of factors in a relationship
- Illustration of the ‘importance’ of factors contributing to seedling production in Fdc

Anyone seen the “gorilla” video?

You can miss some really BIG things if you are too focused in one area

Most mistakes in thinking are inadequacies in perception rather than mistakes of logic

- Feedback loops are not always intuitive !

Desired Outcome	Method Employed	Result	Feedback Loop
Protect trees	Suppress fir	Increased tree mortality	Suppress fire Fuel Accumulation Larger Fires
Increase sheep	Remove coyote	Decreased sheep	Remove Coyote Elevate Jackrabbit Decrease grass