



CONE COLLECTION:

TIMING AND SELECTION OF CROP TREES

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STEPS TO A SUCCESSFUL COLLECTION

1. PLANNING

2. COLLECTION METHODS

3. YIELDS

4. HANDLING & STORAGE

PLANNING

- SEED TRANSFER GUIDELINES

EACH SPECIES IS DIFFERENT:

PP: 50 miles & +/- 500 ft.

DF: 30 miles & +/- 300 ft.

WL: 2 zones <4000 ft & >4000'

WP: Stay within its habitat

PLANNING

- GENETIC DIVERSITY
 - MINIMUM OF 10 TREES
 - SEPARATED AT LEAST 2 TREE LENGTHS
 - SELECT TREES WITH GOOD PHENOTYPES
 - SMALL LIMBS
 - TAPER, SWEEP, CROOK, ETC.

PLANNING

- CROP EVALUATION
 - FIND AREAS WITH HEAVY CROPS
 - LOTS OF TREES WITH LOTS OF CONES
 - NOT A FEW TREES WITH LOTS OF CONES
 - CHECK FOR PRESENCE OF INSECTS

PLANNING

- CROP EVALUATION

- CUT TEST

- BEGIN CHECKING IN MID JULY
- 5+ CONES FROM 4-5 TREES PER AREA
- CHECK AT 2 WEEK INTERVALS
- SPECIES GUIDELINE

PP: 6

DF: 5

WL: 2



PLANNING

- CROP EVALUATION

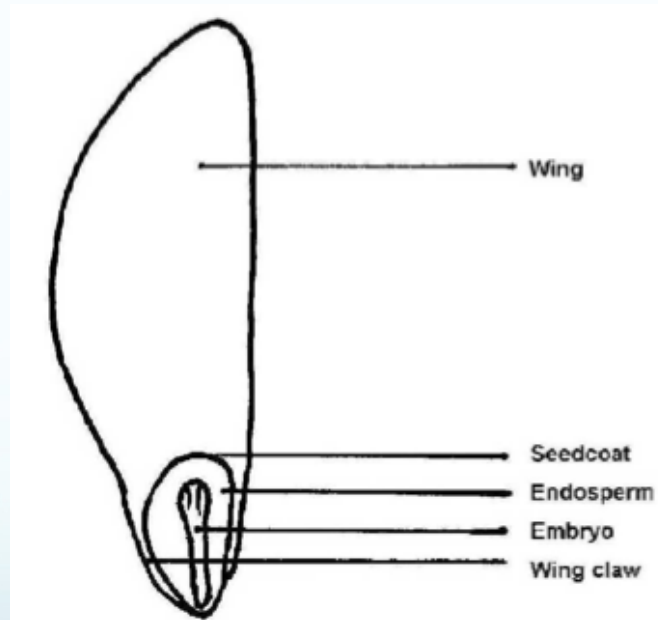
- MATURITY

- CONE COLOR DOES NOT NECESSARILY DETERMINE RIPENESS
- ONE EXCEPTION: WRC TURNS YELLOW



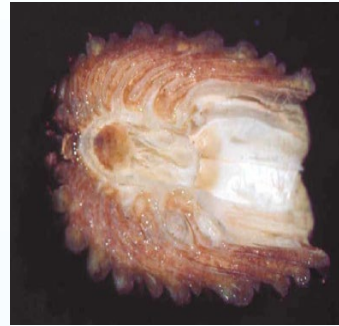
MATURITY

- SEED PARTS



PLANNING

- MATURITY



PLANNING

- MATURITY

- COMMON MISTAKES

1. CONVENIENCE

- LOGGER ALREADY IN AREA
- CONTRACTOR AVAILABLE

2. WEATHER

- EARLY FROST
- HOT & DRY OR RAINY

3. ELEVATION

- PAY ATTENTION

COLLECTION METHODS

1. CLIMB & PICK

- EXPENSIVE
- HIGHLY DESIRED TREES

2. SQUIRREL CACHE

- GOOD OPTION, BUT BE CAREFUL
- LOOK AT STAND CHARACTERISTICS
- CHECK CONE MATURITY OFTEN
- WATCH FOR OLD CONES
- CONES ARE OFTEN DAMP, GET THEM DRYING QUICKLY

COLLECTION METHODS

3. FALL & PICK

- BEST WOODS RUN COLLECTION METHOD
- CONTROL OF PHENOTYPES
- CHEAP

COLLECTION METHODS

4. SEED ORCHARDS

- MORE CONSISTENT CONE CROPS
 - MANIPULATE USING TECHNIQUES SUCH AS GIRDLING, GA, ETC.
- VERY FEW INSECTS AND DISEASE
- EASILY MONITOR MATURITY AND CUT COUNTS
- CONTROL OF TREE HEIGHTS
- IMPROVED GENETICS

COLLECTION METHODS

- SEED ORCHARD



COLLECTION METHODS

- QUALITY CONTROL



YIELDS

- | SPECIES | AVE GERM | SEEDS/CAVITY | SEEDLINGS/BUSHEL |
|---------|----------|--------------|------------------|
| WL | 79% | 3 | 13,700 |
| PP | 86% | 2 | 4,200 |
| DF | 88% | 2 | 41,453 |

RECORD KEEPING

- BE SURE YOU KEEP ACCURATE RECORDS

SPECIES _____ YEAR _____

SEED LOT NUMBER _____ ELEVATION _____

LOT NAME _____ STAND NO. _____

TWP _____ RNG _____ SEC. _____

HABITAT TYPE _____ SNOW DEPTH _____

COLLECTION TYPE: FALL & PICK _____ CLIMB & PICK _____ SQUIRREL CACHE _____

COLLECTOR _____ COLLECTION DATE _____ \$/BUSHEL _____

BUSHELS COLLECTED _____ NUMBER OF TREES COLLECTED FROM _____

CUT TEST AVERAGES _____ STORAGE LOCATION _____

CONE CONDITION: SIZE _____ COLOR _____ MATURITY _____ INSECTS _____

COMMENTS _____

HANDLING & STORAGE

- USE BURLAP BAGS ONLY
 - 1 BUSHEL BAGS PREFERRED
 - ONLY ½ BUSHEL OF CONES PER BAG
 - DOUBLE BAG SMALL SEED SPECIES (WL, ES)
 - TURN BAG INSIDE OUT
 - MAKE SURE THERE ARE NO HOLES



HANDLING & STORAGE

- TAGS & BAG TYING

- INSIDE & OUTSIDE TAGS
- PROPERLY TIE THE BAGS

CONE PICKERS CERTIFICATION
I certify and honestly state:
The cones within this container were collected or picked by me, or through my personal supervision from the following location:

LOT NO. # _____
DATE COLLECTED _____
LOCAL NAME OF COLLECTION AREA # _____
ELEVATION - NEAREST 100 FEET # _____
DATE COLLECTED # _____
SIGNATURE OF PICKER OR WORKING SUPERVISOR # _____

CONE COLLECTOR'S CERTIFICATION
I certify the cones within this container were collected by me, or those of personal experience, from the following location. This information must be filled in and placed in each baggie cone and labeled into vehicle at point of collection.

LOT NO. # _____
DATE COLLECTED _____
LOCAL NAME OF COLLECTION AREA # _____
ELEVATION _____
DATE COLLECTED _____
SIGNATURE OF COLLECTOR _____
BROWN BEEDE CO.
YANNEKAWA, WA



HANDLING & STORAGE

- KEEP CONES OUT OF SUNLIGHT
- DO NOT PUT BAGS IN A PILE
- DO NOT THROW OR DROP BAGS
- RACK THEM OR HANG THEM RIGHT AWAY
- HAVE GOOD AIRFLOW



HANDLING & STORAGE

- DRYING PROCESS

- NO NEED TO TURN BAGS IF YOU HAVE GOOD AIRFLOW
- SHOULD AVOID ENCLOSED BUILDINGS
- PUT IN FANS IF YOU THINK YOU NEED MORE AIRFLOW
- LET CONES DRY BEFORE YOU SHIP

REMEMBER, FRESH PICKED CONES ARE LIKE GRASS CLIPPINGS

CONCLUSIONS

- BE PATIENT & PAY ATTENTION TO DETAIL
- ALWAYS BE LOOKING FOR THE NEXT CROP
- BUDGETS NEED TO BE FLEXIBLE
- SHORTCUTS WILL LIKELY LEAD TO PROBLEMS



THANKS TO : CHARLES BROWN
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QUESTIONS????

