



GLOBAL G.A.P.

KEVIN RIEL

DOUBLE R



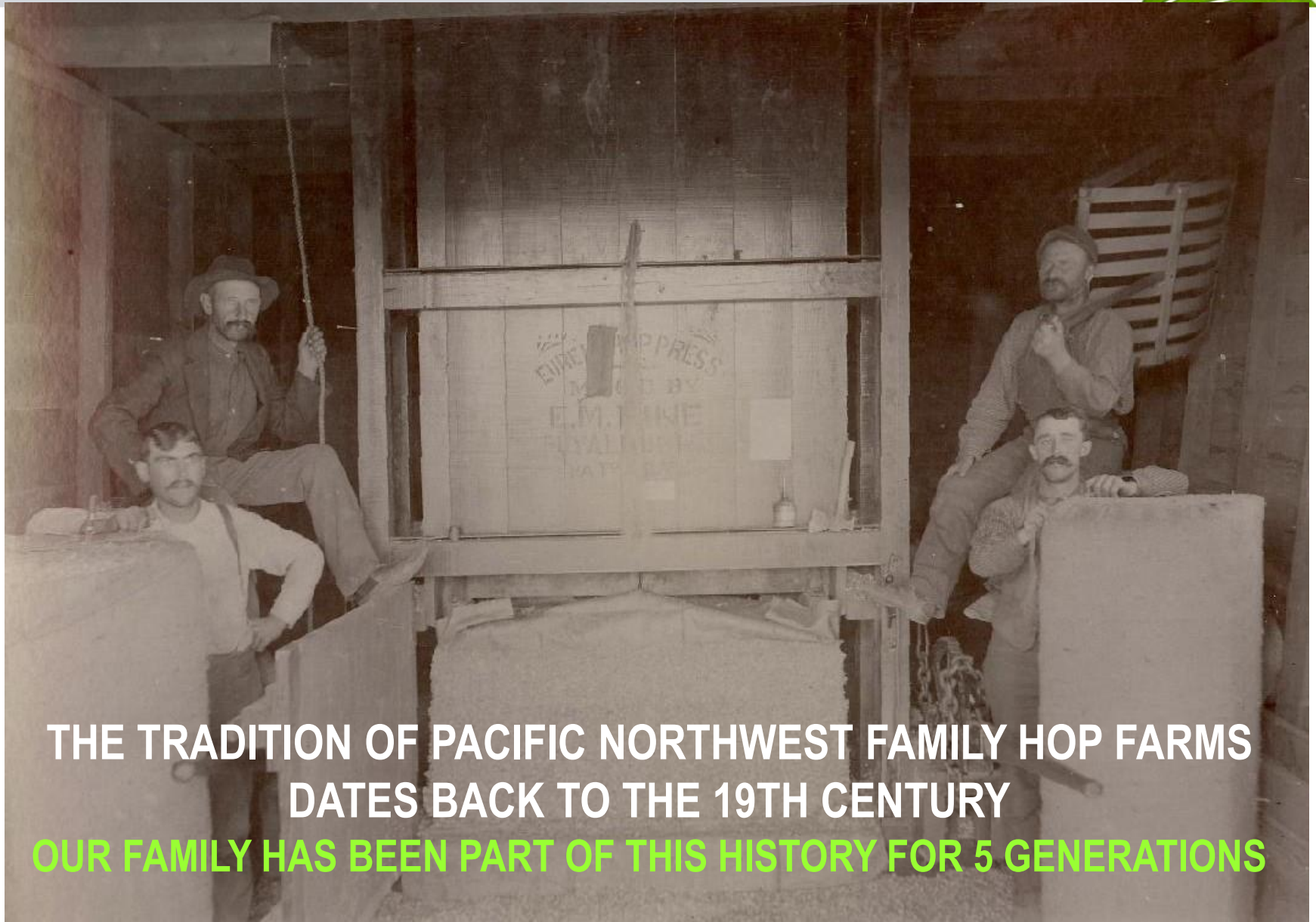
HOP RANCHES



Est. 1945



Moxee Hop Company, 1893



THE TRADITION OF PACIFIC NORTHWEST FAMILY HOP FARMS
DATES BACK TO THE 19TH CENTURY

OUR FAMILY HAS BEEN PART OF THIS HISTORY FOR 5 GENERATIONS

Agenda



Water – Irrigation

timing/amount/frequency



Training

scheduling/techniques

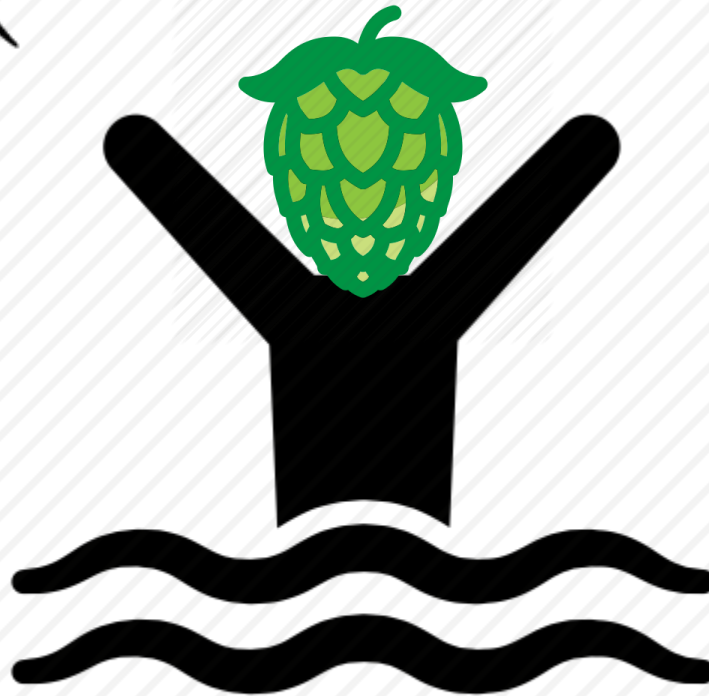


Fertilization

timing/frequency/rates/techniques



Water



“Hops like their heads dry, and their feet wet!”

Water



- Application technique matters
- How far is water applied from crown?
- Is moisture already present in the field?
- Run-off, nutrition issues

Water

- Disease incidence
- Oxygen depredation
- Fusarium Canker, Phytophthora, Downy Mildew (wet head)
- Humidity level (PM)



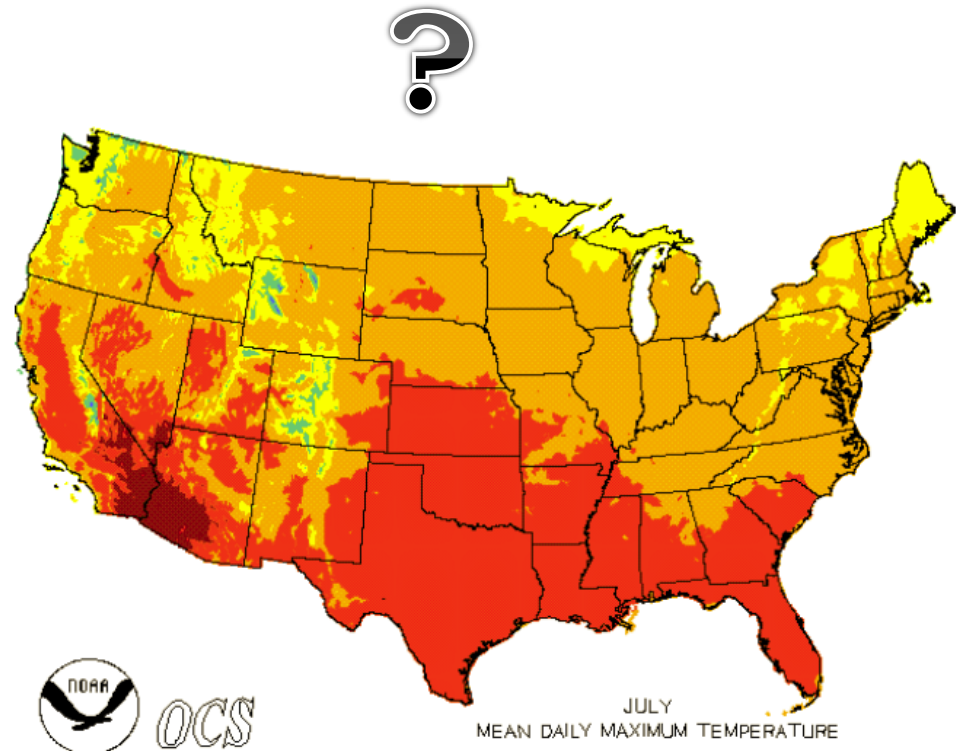
Training

- Proper pruning “starts the clock”
- Does the field need to be pruned at all?
- Vigorous varieties may need twice
- Carbohydrate reserves from winter
- Photoperiod sensitive



Training considerations

- Latitude – daylight length
- Breeding for photoperiod
- General weather – degree days/heat units
- Micro climates
- Wind/ other growing considerations



Training

- Order of pruning/training
- Slower growing varieties first
- Need proper amount of vine structure
- Sunlight penetration for flowering
- Number of vines to train
- Type of vine to train



Training

Sample Order

Cascade

Sorachi Ace

Willamette

Virus-free Cascade

Amarillo

Centennial

Cluster

Citra

Ekuanot

Zeus

Bravo

Eureka!



Training

- Weather
- Record keeping
- What worked/ Feedback?



Fertilization

- Nitrogen requirements (first year, versus mature)
- P & K
- Application techniques
- Timing
- Soil pH and organic matter
- Micronutrients (Zn, B, Ca)
- How to apply micros?



Fertilization

- Monitoring
- Feedback



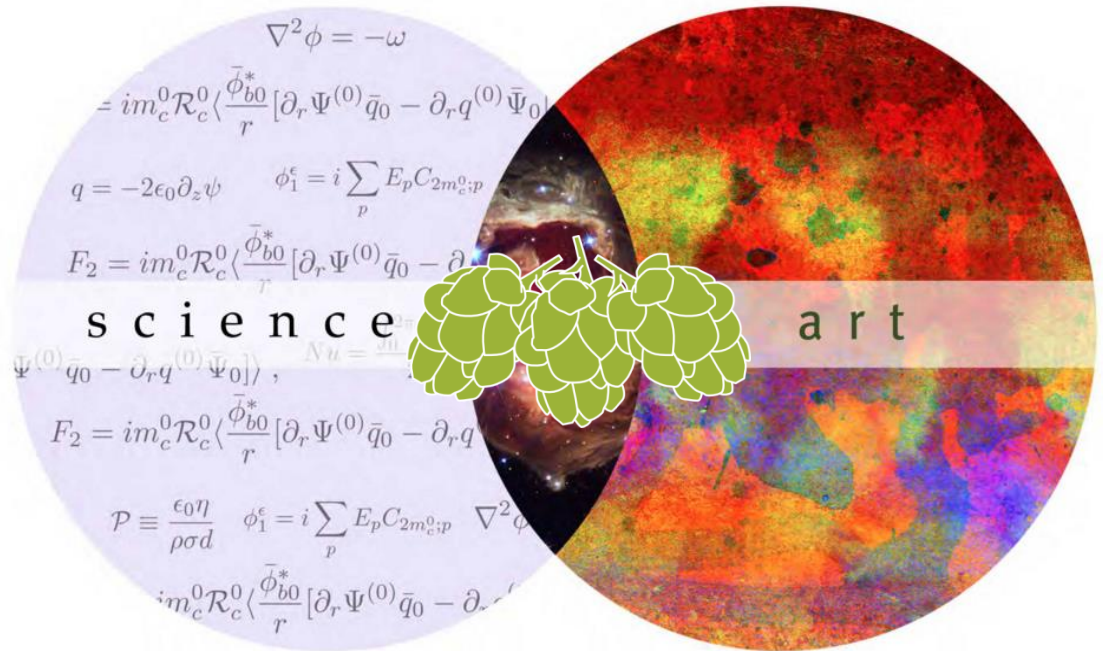
How do we improve?

- Accurate records of:
 - Weather – different each year
 - Training dates and techniques
 - Harvest data



Science versus Art?

- Records
- Weather data
- Boots on the ground
- What does it feel like?
- Experimentation



Background & History of HGA

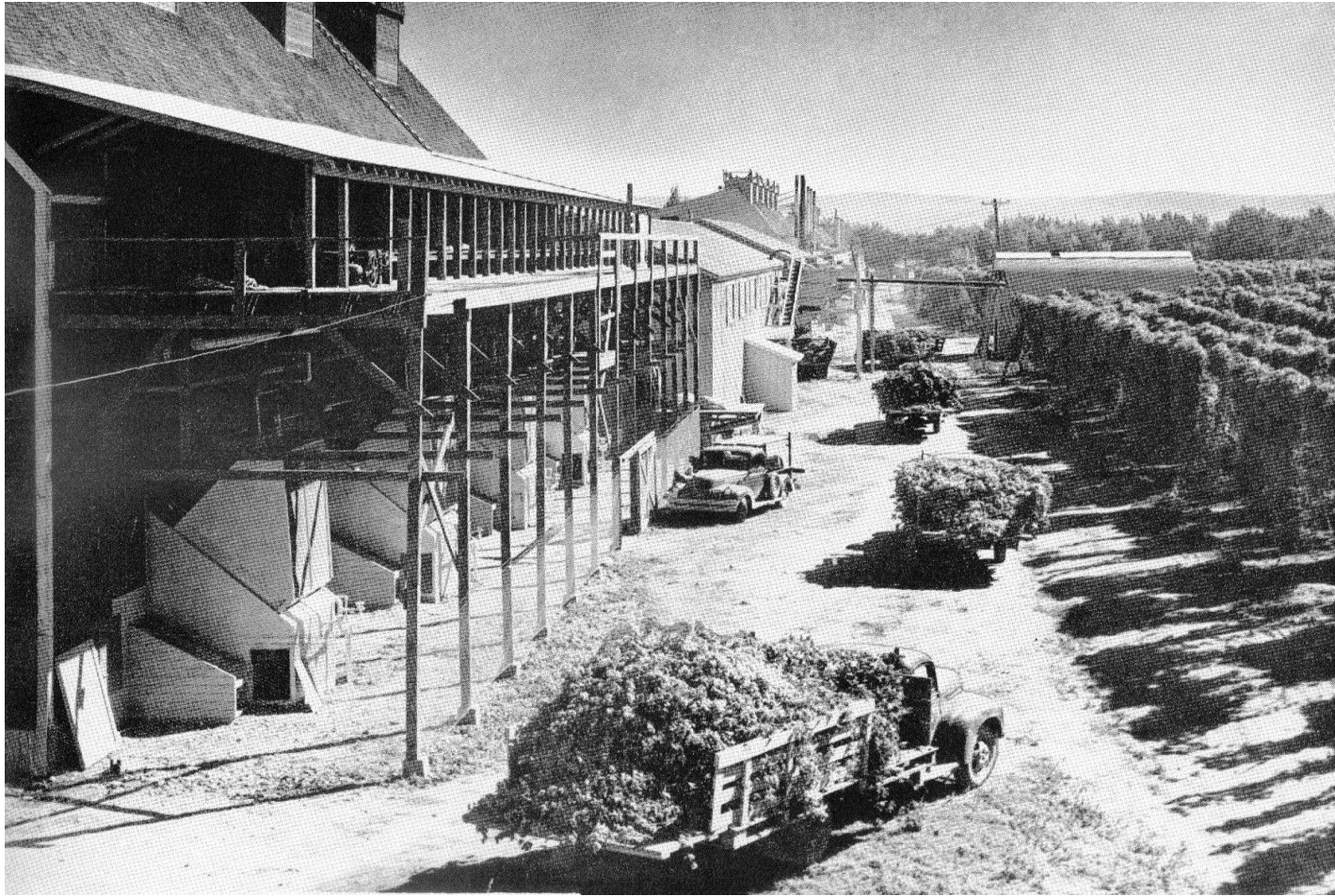


Photo courtesy of John I Haas "Yakima Golding Hop Farms Book," circa 1953

Background & History of HGA

- Established in 1957 to represent the interests of US hop growers
- Current areas of focus include:
 - statistics
 - public relations
 - trade education
 - foreign market development
 - community of knowledge and best practices
 - Research
 - Small grower council (at large Non-PNW board pos.)



Questions?



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