

HAZELNUTS 2016

Highview Orchards

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Late Spring, Early Summer Nutlet Formations



Starting Life, Difficult Audience ?



Nuts form developing in Summer



Like Growing trees, Nurturing needs are Important for Timely development.



Drought of 2016 was serious for Crops and Trees

(-later we'll talk about meeting demands under stress)



COST AREA REVIEW (our 8-10 acres)

&(Check the Field Trial Plots Budgets)

- I- Orchard Crop direct costs, * Fertilizer, Agrichemicals, Nursery Stock
(1st two, \$1200. Budget could balloon to 4-\$5,000 even W/O Stock)
- II- Operating in-direct costs * Fuels, Machinery R & M, add in others.
(\$500 fuels. plus \$2000. budget could be \$6,000 overall.)
- III- Administration * Insurance, Property Tax @ 25%, Loan Interest,
Utilities and Professional Fees, also Misc Other.

(Budget your specifics, with farm tax file allocations.)

(Calculate this as the largest cost area at 8-\$9,000, depends on Bldgs & Land Base)

** *"Above all consider how you will support your habit."*

PRODUCTION & GROSS DOLLAR GOALS

- ESTABLISHED INDUSTRY STANDARD 3000 pounds per Acre average??
- Highview Orchard's Modest Goals! *Density of 150 trees per acre.*
\$3.00 per lb. ****

1 st . Scenario	2 nd Scenario	3 rd . Scenario
• 5 lb/tree	10 lb/tree	15 lb/tree
• 750 lb/acre	1500 lb/acre	2250 lb/acre
2250.\$/acre	4500.\$/acre	6750.\$/acre

CROP SETTING VARIABLES

- Hazelnut Pollination needs in late winter, early Spring are complex with annual weather conditions. Especially if dormancy breaks early.
- Viable Pollen shedding from Male catkins and transfer to Female Flowers, necessary from another variety (s) can make this tricky business.
- Winds and Temperature dependents' and Catkin and Flower development stages are factors for success. (I've used mechanical air movement also.)
- Tree health of course remains vital to vegetative and fruiting success.
- It is important to chose non-wasteful fertilizer programs with any crop. Hazelnuts take time to establish so efficiency with effective results are crucial to keep costs low.

Spring Catkins



CULTURAL PRACTISES FOR A COMPLETE SEASON -1

- **Pruning:** Structure to a Central Leader, Multiple Scaffold leaders, or Multiple Ground Stems. Make **secondary cuts** to clear crotches, single out branch leader ends. The **necessary removal** of narrow inclusion angles and excessive density of parallel or crossing branches and shoots should occur.
- **Weeds** are controlled by herbicides, pre and post emergence. Care must be taken when systemic products are used so the Hazelnut plant is not harmed.
- **Sucker control** by mechanic and chemical means as with weed and grass control directs tree growth for vigour and permanent structure.
- **Fertilizer choices** involve ground applied and Foliar applications. The latter gets direct nutrient availability to a tree, especially when drought causes a reduction in translocation of nutrients in the soil. Microbial activity in the root zone is also maintained for continued maximum tree health.
- **The role of Calcium availability** must be understood.
- Irrigation use depends on water availability, the technical costs & management time one has or wishes.



Trellis Support



Tools of the trade for sucker removal







SPRAYING FREQUENCY for CULTURAL PRACTISES -2

- Herbicides 2-4 times depending on weed growth activity.
- Bactericide for Bacterial Blight, Fungicide for European Filbert Blight.
I like both Spring and Fall (1-2 X) fixed copper, bravo, it can mean up to 4 X
- Insecticides, important for Japanese Beetle usually starting in July. (1-2X)
Less common Filbert worm , Wood borer, & OBLR.
- Filbert Bud Aphids and Mites, the latter discolours the nut tip. (heat usually initiates more prolific activity.) Opal, specific Aphicides or Miticides.
- Foliar Applied Nutrients, alone and with sprays if materials tested in a 20 litre pail of spray tank mix. Adjust water ph., hardness and cleanness. Spreader stickers can help some with water softness and absorption.

HIGHVIEWS' FOLIAR EXPERIENCE 2016

- Severe drought for 4-4.5 months. Driest in 100 years, Agri-Corp.
- GMS at 2% or 30 litres in a 1500 litre Sprayer, was Leaf applied for immediate and best translocation when May to Sept 1st soil conditions were driest. Timed with a slow drying application, every 2 weeks.
- I believe **GMS**, the product we used nurtures the plant, translocates to the root zone and feeds soil Microbes which in turn symbiotically make soil minerals available to the plant.
- Benefits appear to be many. Watering needs and costs are reduced, granular fertilizer can be less frequent since NPK and micro nutrients are foliarly provided. Extensive leaf analysis show very good results. Calcium availability is very important to the availability of many nutrients also.
- Seasonal growth processes kept going for excellent nut size and fill, the hallmarks of quality production. Hazelnuts have been known to act on stored reserves but foliar timing is crucial to replenishment and use.

Drought, July 15th 2016







Stress shows with leaf yellows, on peach trees



HARVEST LESSONS BY INITIATION- 2016

- Used the Wizard roller and handle type.
- Some Cultivars with more husks needed some raking to separate them into piles and shatter some nuts out also.
- Raked piles were then placed into a 4 ft. plastic section of Culvert which was in a ATV trailer with tipping ability.
- A cordless drill with a plaster mixer extended into the culvert and thrashed the husks to release more nuts.
- A leaf blower in vacuum bag mode sucks husks at low throttle to clean what is in the trailer bottom & culvert. A shrub rake can get unhusked nuts into drying bags for later processing.
- The trailer is emptied periodically to keep the process going and separate Cultivars.









POST HARVEST LEARNING

- Drying, Added Husking and Sizing for Storage.
- Limited drying was done this past season and only in the cold room to circulate air. This keep air fresh and humidity in check.
- A garbage can was used with the cordless drill and plaster mixer if problem husks on nuts still existed.
- We had a pedestal fan and it blew at high speed into a 7 X 14 foot trailer deck with sides. Boxes ahead of the fan collected nuts with a centered box catching the most. Dirt and leaves were blown forward onto the trailer deck.
- This box was then dumped on a chute section of a 100 year old slatted Pear grader. The ½ inch slats allowed remaining dust, dirt and any small sized hazels to drop down to strategically placed plastic totes.
- Varieties were separated and placed a shelf levels of a steel tray or skid to be placed in a protected cool room.



MARKETING SMALL VOLUMES

- Fresh to farm Markets, both seasonal and year around. Customer sized amounts.
- Independent Confectioners who sell processed product with their own Recipes. (toasting, to infusing flavours, Hazelnut Butter, and Flours.
- Inquiry from Chefs and restaurants who are catering to local food or just specialty dishes. Those willing to store volumes are valuable.
- Regular people who are adding more nuts to their diet and wish to purchase an longer supply by bag or box amounts.
- This past year saw Ferrero analyze Ontario grown Nuts and we will hear about that Research this afternoon and some direction from it.

RESEARCH IMPORTANCE

- Best location for Cultivars, both for in the Orchard with pollination and Climatically around Ontario.
- Best Pollinator Cultivars that are cross compatible with other varieties.
- Size, Shape and Taste preferences for multiple uses. Research more of this in the future. (eating out of shell, raw or roasted; flours, pastes and other processing uses such as Milks.)
- Water and Nutrient requirements for hazelnuts, especially in proposed growing areas.

Nuts on the Orchard Floor and Trellis Support



3 PTH Planter

