

Mechanization of Vineyard Tasks

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http://aggie-horticulture.tamu.edu/vitwine/

The screenshot shows a web browser window displaying the Viticulture & Enology website. The URL in the address bar is <http://aggie-horticulture.tamu.edu/vitwine/>. The page features a header with the Texas A&M AgriLife Research logo and navigation links for Home Page, Current Obs, Grants & Opportunities, and Get SSARE Calls for Proposals. Below the header is a banner with the text "Viticulture & Enology" and a subtext "Just another Aggie Horticulture Network site". A red navigation bar contains links for HOME, VITICULTURE, ENOLOGY, and OUR SPECIALISTS. The main content area features a large image of wooden barrels and a field of yellow flowers. A "SOCIAL MEDIA" section includes a Facebook icon and a thumbnail for a post from "Texas Vi...". The bottom right corner of the page features the large Texas A&M AgriLife Research logo.

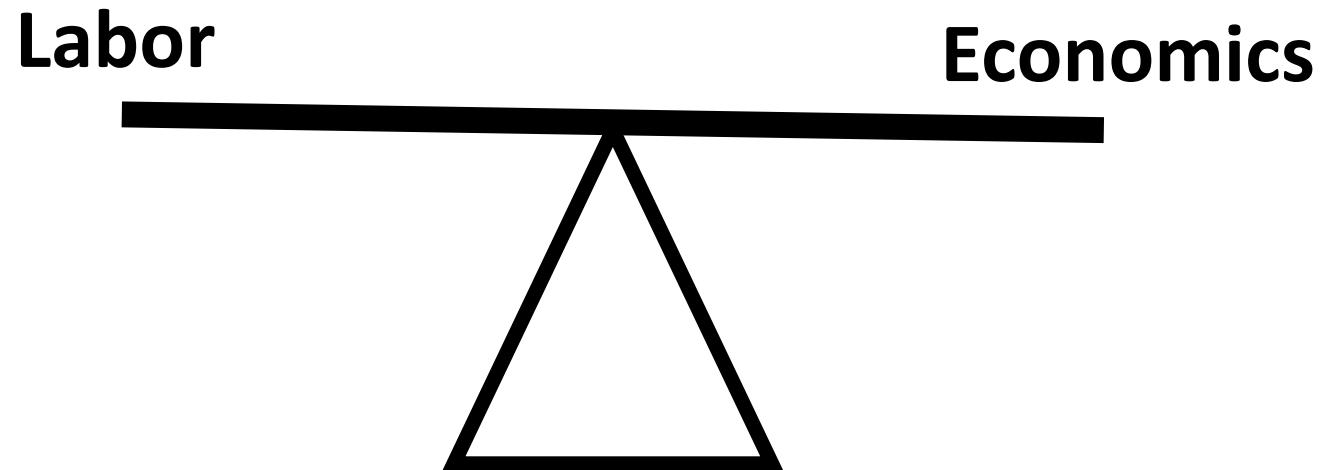


What vineyard tasks can be mechanized?

- Planting
- Pruning
- Shoot thinning
- Desuckering
- Shoot positioning
- Leaf removal
- Hedging
- Binding
- Fruit thinning
- Netting
- Harvest
- Fruit sorting
- Spraying
- Irrigation
- Fertilization



When is mechanization appropriate?





Basic Mechanization



Every vineyard should have an airblast sprayer







- CAFFINI RAFAL 6S 1500 -

Caffini 3-Row Air Blast Sprayer
396 Gallon Tank

Oleomatic 3-Control Joystick
Computer 3B9 Automatic Option

Highway Tire Kit

Sprays 2 Full Rows & 2 Half Rows
6-Sided with 2 Diffusers Per Side

With Pre-Mixer

- \$41,000 -





Mechanized Planting



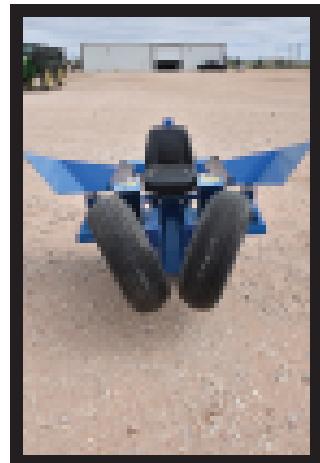
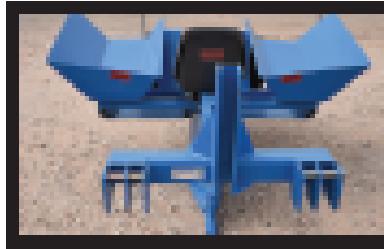
Photos courtesy of Michael Cook







- BLUELINE TP-1000 -

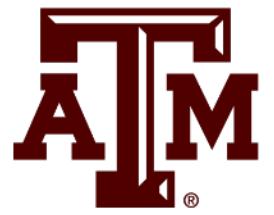


Single-Row Tree Planter • Adjustable Hitch
Single Seat • Replacement Point • Double Gauge Wheels

- \$4,850 -

Courtesy of BE Implement,
<http://www.beimplement.com/>







Two-Row Herbicide Over the Row Sprayer
Four Hoods • Universal Mounting Bracket

-\$6,000-

- BLUELITE HERB2R -



- BLUELITE 200HRB -



NEW!

Herbicide Chemical Tank • Stainless Steel
Implement Tires • Clevis Pin Hitch • 540 PTO

-\$5,400-



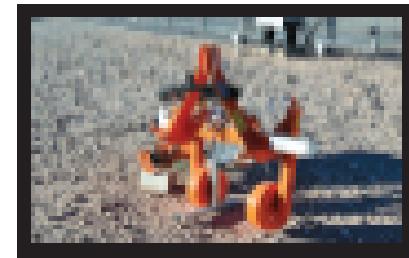
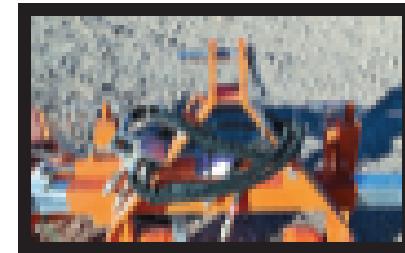
Mechanical Desuckering



NEW!



- RINIERI 6SRV-150 -



Sucker Remover • Telescopic Frame w/Side Displacement Cylinder
Depth Adjust Wheels • Mechanical Angle Adjust w/Flow Divider

- \$5,500 -

Courtesy of BE Implement,
<http://www.beimplement.com/>

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Under-vine Management



- RINIERI EL-140E -



Under Row Power Harrow
1-Sided 1/2 Row • Push Button Electric Override

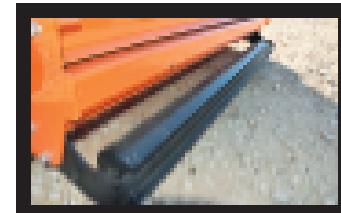
- \$15,000 -

Courtesy of BE Implement,
<http://www.beimplement.com/>





- RINIERI TRC-200 -



7' Flail w/Hammers • Pick-up Tines w/Rear Roller
Universal, All-Purpose Shredder • Fixed 3-Point Coupling
2.9# Hammers that cut wood up to 2.4"

- \$7,000 -

Courtesy of BE Implement,
<http://www.beimplement.com/>

ATM



- RINIERI 6DRF662E -



De-leafer • 4 Hydraulic Movements
(Vertical, Lifting, Side Shift, Head Inclination)
180-Degree Rotation with Tractor SUP

\$22,500



- Binger EB-490P -



De-leafer • 180-Degree Turnover Device
Joystick Control Mast • Widening Fork
Foliage Sensing

\$26,670





NEW!

- RINIERI 6CRV152 -



Single-Sided Vine Trimmer • With Tractor Coupling Frame
5 Vertical Blades • 2 Horizontal Blades • Manual Control

- \$12,500 -

- RINIERI 6CRV252 -



NEW!

Double-Sided Vine Trimmer • 7 Hydraulic Movements
(Lifting, Side Displacement, Tilting)
5 Vertical Blades • 2 Horizontal Blades

- \$24,500 -

Mechanized Shoot Thinning





Shoot Binder





https://www.youtube.com/watch?v=YdEhY_Wd0J4



Irrigation



Pr

Prepruning







- BINGER VSL07P -



Pre-Pruner • Parking Stand • 12x2 Cutting Heads
AOS Auto Opening System for Steel Posts
EDW2-3 Double Acting Valve for 3 Functions

- \$31,480 -

Courtesy of BE Implement,
<http://www.beimplement.com/>

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Pneumatic and Electric Pruners

- RINIERI IRON 400 -



Electric Hand Pruner • Cuts up to 1.6" • Lithium Ion Battery
With Electric Display • 16-24 Working Hours on 1 Charge

- \$2,195 -

Courtesy of BE Implement,
<http://www.beimplement.com/>









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NEW!



- GREGOIRE G220 - - \$175,600 -

Pull Type Grape Harvester
Dual 1500 Liter SS Rear Dumping Bins
Hydraulic Wheel Drive Assist
Clean Tech/Vario MOG Removal System
Twin Cameras • Twin Magnets
540 PTO Pump Drive • In-Cab Joystick controller



Courtesy of BE Implement,
<http://www.beimplement.com/>



NEW!



- BLUELINE GD-154 -



Grape Gondola • 4 Ton Capacity Stainless Steel Bin
High Lift • Bin Dividers • Weighttonics Scale

- \$19,800 -

Courtesy of BE Implement,
<http://www.beimplement.com/>

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USED!



- GREGOIRE G8.260 -

- \$275,000 -

Grape Harvester • Cleantech Vario

2-1500 Liter Rear Dump Stainless Steel Bins

Dual Cameras • Touch Screen Monitor

Dual Conveyor Magnets • Heat & A/C Cabs • 4-Wheel Drive

6 Cylinder Deutz Turbo Diesel Engine • Bow Rods

Sprayer Capable • Hedging Attachment Capable

Hydro Transmission • Dual Cameras • Touch Screen Monitor



Courtesy of BE Implement,
<http://www.beimplement.com/>



Is Hand Harvested Fruit Better?

- Noble et al. 1975: no preference for hand versus machine harvested Petite Syrah, French Colombard, Chenin Blanc
- Clary et al. 1990: no preference for hand versus machine harvested Chardonnay
- Hendrickson et al. 2016: hand versus machine harvested wines were not significantly different





