

# Vineyard Weed Control



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## What are Your Expectations of a Weed Management Program?



- Newly planted/non-bearing vineyards
  - Prevent competition
    - Control weeds through July!
- Established vineyards
  - Prevent competition
  - IPM
  - Radiant heat
  - Worker efficiency
  - Aesthetic



# Herbicide Management is a critical part of Weed Management!!

- Use herbicide rotation
- As with anything TIMING is very important
  - Fall/Spring Split
  - Delayed PRE
  - Winter/Summer Split
- Limit glyphosate use

# Herbicide Options for Newly Planted Vineyards



- PRE
  - Chateau\*
  - Oryzalin (if you can find it)
  - Prowl H<sub>2</sub>O
- POST
  - Glufosinate\*
  - Paraquat\*
  - Glyphosate\*
  - Clethodim (Select)
  - Poast
  - Fusilade

\*Grow tubes required

## Herbicide Program for Newly Planted Vineyards



- Start weed-free
  - At planting
- Grow tubes applied at planting
- Apply Chateau @ 6 to 8 oz
  - Allow soil to settle after planting
  - PRE control for 60 to 80 days
- Apply Chateau @ 6 to 8 oz + paraquat or glufosinate once control from initial applications begins to fail
- Control perennial grasses with clethodim or Fusilade

# Timing Herbicides in Established Vineyards

- Fall/Late Spring split
  - Weed free through pruning, spring freeze events
  - Less desirable if erosion from winter rains is an issue
- Delayed PRE
  - Program begins in March
  - Offers shortest residual into fall
- Winter/Summer split
  - Program begins in March
  - Offers longest residual into fall



Source: VisitNC.com

**NO PRE program controls bermudagrass or Johnsongrass!**

# Fall/Summer Split

- Late Oct. thru Thanksgiving
  - Glufosinate or Paraquat + PRE
    - Simazine @ 2 qt
    - Chateau @ 6 to 8 oz
    - Alion @ 3.5 fl. oz (DO NOT use if Alion applied in the summer)
- Late May or Early June
  - Glyphosate, Glufosinate, or Paraquat + PRE
  - PRE Options
    - Chateau @ 6 to 12 oz
    - Alion @ 3.5 to 5 fl. oz (DO NOT use if Alion applied in the fall)
    - Simazine @ 2 to 3 qt + Oryzalin @ 3 to 4 qt
    - Rimsulfuron @ 4 oz + Oryzalin @ 3 to 4 qt
    - Zeus Prime @ 12 to 15 fl. oz + Oryzalin @ 3 to 4 qt
    - Karmex @ 2 to 3 lb + Rimsulfuron @ 4 oz



Prowl is alternative to Oryzalin

# Delayed PRE

- Mid March
  - Glyphosate @ 1qt (Generic) or 22 fl. oz (Roundup Power Max)
  - Glufosinate @ 32 to 48 fl. oz. + AMS @ 8 lb/100 gal of spray solution
- 1<sup>st</sup> or 2<sup>nd</sup> Week of May (emerging summer annuals are 2 to 3” tall)
  - Glyphosate, Glufosinate, or Paraquat + PRE
    - PRE Options
      - Alion @ 5 fl. oz
      - Simazine @ 2 to 3 qt + Oryzalin @ 3 to 4 qt
      - Chateau @ 12 oz
      - Zeus Prime @ 12 to 15 fl. oz + Oryzalin @ 3 to 4 qt





# Winter/Summer Split

- Initial application in mid March
- Follow up application when control from initial application fails
  - Emerging weeds are 2 to 3” tall
  - Second application will usually be in late June
- Herbicide options
  - Glyphosate or Glufosinate plus PRE
  - PRE Options
    - Chateau @ 6 to 8 oz
    - Zeus Prime @ 10 to 12 fl. oz + Oryzalin @ 2 qt
    - Rimsulfuron @ 4 oz + Oryzalin @ 2 qt
    - Chateau @ 10 to 12 oz fb Rimsulfuron
    - Chateau @ 10 oz fb Alion @ 3.5 fl. oz



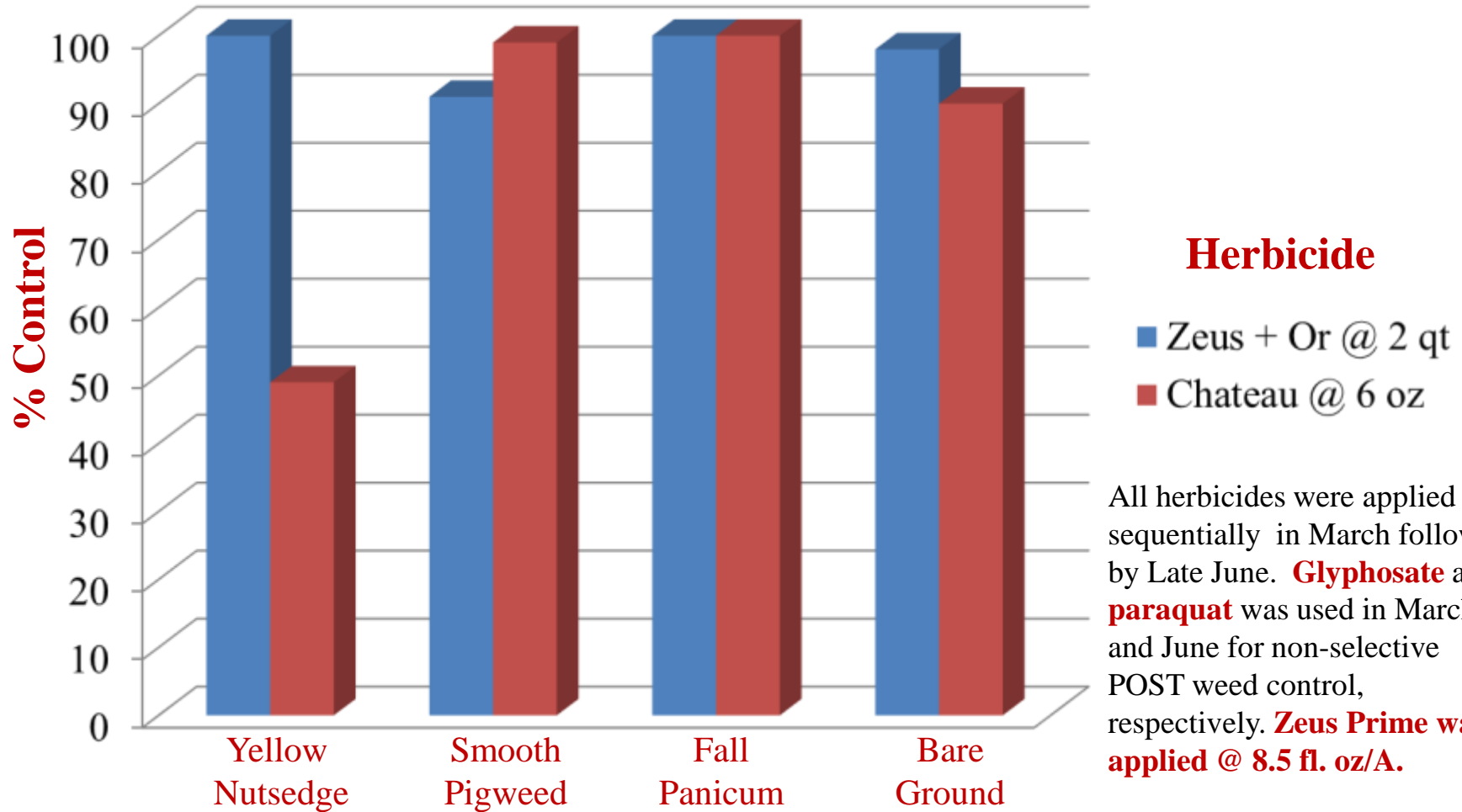
# Zeus Prime XC

*Sulfentrazone + Carfentrazone*



- 8 to 15 fl. oz/A
- Use on vines established more than 2 growing seasons
- DO NOT tank mix with Chateau
- Needs to be tank mixed with Oryzalin
- After bud break apply with shielded application equipment
- 3 day PHI
- 60 days between sequential applications
- **Yellow nutsedge**, Crabgrass, Goosegrass, Groundsel, Pigweed, Lambsquarters, Mallow, Morningglory, Nightshade, Prickly Lettuce, Filaree, Sowthistle

# Residual Weed Control with Sequential Applications of Zeus + Oryzalin



All herbicides were applied sequentially in March followed by Late June. **Glyphosate** and **paraquat** was used in March and June for non-selective POST weed control, respectively. **Zeus Prime was applied @ 8.5 fl. oz/A.**

August 9<sup>th</sup> in Henderson County, NC

# Matrix, Pruvín, Grapple or Solida

## *rimsulfuron*

- 4 oz/A
  - “When applied as a banded treatment (50% band or less) Matrix SG may be applied twice per year. However do not apply more than 4 oz/A on a broadcast basis”
- Vines have to be established 1 year or more
- 14 day PHI
- PRE and POST
- Yellow nutsedge activity
  - PRE + Early POST
    - Apply prior to emergence followed by 2<sup>nd</sup> application when 2” to 4” tall
  - POST + POST
    - Apply when 2” to 4” tall followed by a second application 14 days later.



# Alion



- Indaziflam
- Application Parameters
  - Vines established 3 years or more
  - 3.5 to 5 fl. oz/A
    - Do not use on sand
    - Do not use on soils with a 20% gravel content
    - *Use in vineyards where there are 6 inches of soil barrier between the soil surface and the major portion of the root system.*
  - Total use rate can not exceed 5 fl. oz/A
  - Allow 90 days between applications
  - 14 day PHI
  - DO NOT use in GA or FL
- Broad spectrum PRE control of broadleaf and grass weeds

# Planting Depth Restriction: Fact or Fiction?



- The label clearly states:
  - *Use in vineyards where there are 6 inches of soil barrier between the soil surface and the major portion of the root system.*
- Research in NC has show there to be no injury concern
  - Consecutive application years
  - Multiple locations
  - Muscadine and bunch grapes
  - Piedmont and coastal plain

# Graminicides

- Clethodim
  - 2 L (generic formulations)
    - 1.75 to 2.5 pt/A
  - 1 L (Select Max, Intensity One)
    - 9 to 16 fl. oz/A
    - Non-bearing ONLY!
- Poast
  - 1.5 to 2 pt/A
  - 50 day PHI
- Fusilade DX
  - 12 to 24 fl. oz/A
  - 50 day PHI



**POAST**

# Bermudagrass

- Perennial
- Thin leaves, erect hairs on collar region
- Root at stem nodes
- Spreads via stolons and rhizomes

*Control – Poast 1.5 pt (6”) fb 1 pt (4”), Fusilade 1.5 pt (8”) fb 1 pt (8”); Always include COC with Poast and Fusilade*



Photos Courtesy of Virginia Tech and UC Davis, Univ. Missouri





# POST Herbicides



POAST



\*Trademark of Dow AgroSciences LLC



# Non-Selective POST Herbicides

- **Glyphosate**

- Roundup PowerMax @ 22 fl. oz/A
- Generic 4 lb Glyphosate @ 1 qt/A
- Generic 5 lb Glyphosate available in 2017
- Try to limit applications
- Avoid use in newly planted vineyards



- **Paraquat**

- Gramoxone SL @ 3 pt/A
- Generic paraquat @ 2 pt/A



- **Glufosinate (commit this to memory)**

- Rely @ 32 to 48 oz/A Generic formulations are in the market place
  - Reckon
  - Life Line
  - Cheetah



Use Grow Tubes for 2 years!!!

# Rely and the Gang!

- Glufosinate
  - Non-selective
  - DO NOT allow contact with immature bark, fruit, or leaves
  - 48 fl. oz/A (DO NOT exceed 164 fl oz/A per year)
    - 32 fl oz/A is working well!
  - Several formulations cleared for use in fruit
    - Rely (Bayer)
    - Reckon (Solera)
    - Life Line (MANA)
    - Cheetah (NuFarm)



Rely<sup>280</sup>

 solera RECKON™



# Considerations for 2021

- Oryzalin
  - Unavailable
  - Hopefully someone will pick it up for the future
- Gramoxone 3 SL



 **Gramoxone<sup>®</sup> SL 3.0**

## New in 2021

- Gramoxone SL 3.0
  - New formulation comparable to generic formulations
  - Closed system for mixing

 **Gramoxone<sup>®</sup> SL 3.0**

Use Rates in pt/A		Use Rates in fl oz/A	
Gramoxone SL 2.0	Gramoxone SL 3.0	Gramoxone SL 2.0	Gramoxone SL 3.0
1.0	0.7	16	11
1.5	1.0	24	16
2.0	1.3	32	21
3.0	2.0	48	32
4.0	2.7	64	43

 **Gramoxone<sup>®</sup> SL 3.0**

 syngenta.

<https://www.syngenta-us.com/herbicides/gramoxone-sl-3.0>

## Paraquat Restrictions

- Must be certified applicator
  - Regulated by each state
- Complete EPA approved paraquat training
  - Required for all paraquat applicators
- Closed-system packaging
  - Syngenta has an online video on how use new closed packaging system
  - Special cap on each 2.5 gal container
    - Cannot be removed or opened by hand
    - Uses an adaptor mounted to mix bowl or spray tank for dispensing
    - Retailers will have the adaptors
    - Container is graduated to aid in mixing



# Questions

