

# Changing Trends in Northeast California Alfalfa Weed Management

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# More weeds in conventional alfalfa in recent years



# Why?

- Alfalfa stand density has decreased due to drought, gophers, and old age
- Metribuzin and hexazinone are not working as well as they have in the past
  - Some weed populations have likely developed resistance (unconfirmed)
  - Some weeds, shepherdspurse, are emerging earlier in the fall and growing larger over the winter before late winter herbicide treatment
  - More growers are irrigating after last cutting promoting early weed germination
- Many fields are not being treated until late March and early April due to unfavorable weather
- Lack of measurable precipitation after application prevents preemergent herbicide incorporation

# Preemergent/Postemergent Herbicides for Established Alfalfa

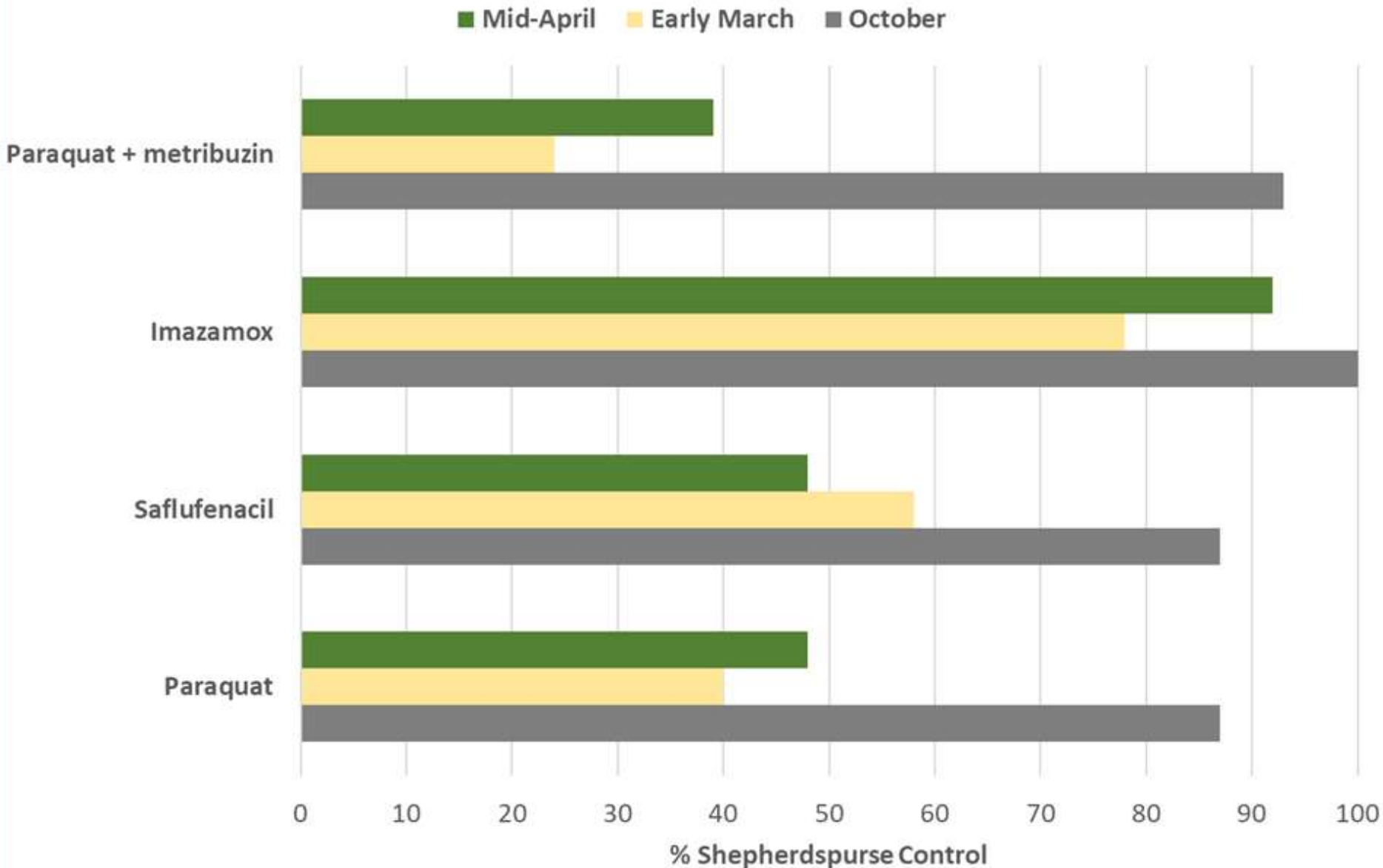
- Hexazinone and metribuzin have been the go-to preemergence/early postemergence active ingredients for 20+ years
- Growers and PCAs have reported weed escapes with late winter applications of paraquat and metribuzin
- Imazethapyr (Pursuit) and imazamox (Raptor) use is increasing in established alfalfa (*prickly lettuce and plant-back restrictions limit use*)
- Flumioxazin (Tuscany or Chateau) is another alternative; Historically, it did not provide superior weed control compared to metribuzin, but it offers a rotation in mode of action and can aid in weed control in fields with metribuzin tolerant weeds (*does not control emerged grasses*)

# Burndown Herbicides for Established Alfalfa

- Burndown herbicides are often added to the tank-mix to control emerged weeds
- Paraquat (Gramoxone)- activity on grass and broadleaf weeds, rapid foliar dessication but does not translocate throughout the plant (*coverage and surfactant important for good control*)
- Carfentrazone (Shark)- activity on several broadleaf weeds, rapid foliar dessication but limited movement throughout the plant
- Saflufenacil (Sharpen)- activity on broadleaf weeds, absorbed in roots and foliage, pre-activity, must add a methylated seed oil for good foliar activity, erratic activity under cold, drought conditions

What's the best herbicide  
treatment today?

**Figure 1. The Effect of Herbicide Application Timing on Shepherdspurse Control in Established Alfalfa near Newell, CA in 2023**



Growers should consider fall  
herbicide treatment especially in  
problem fields with emerged weeds  
at the time of last cutting



# Late Winter Dormant Herbicide Options



# Untreated

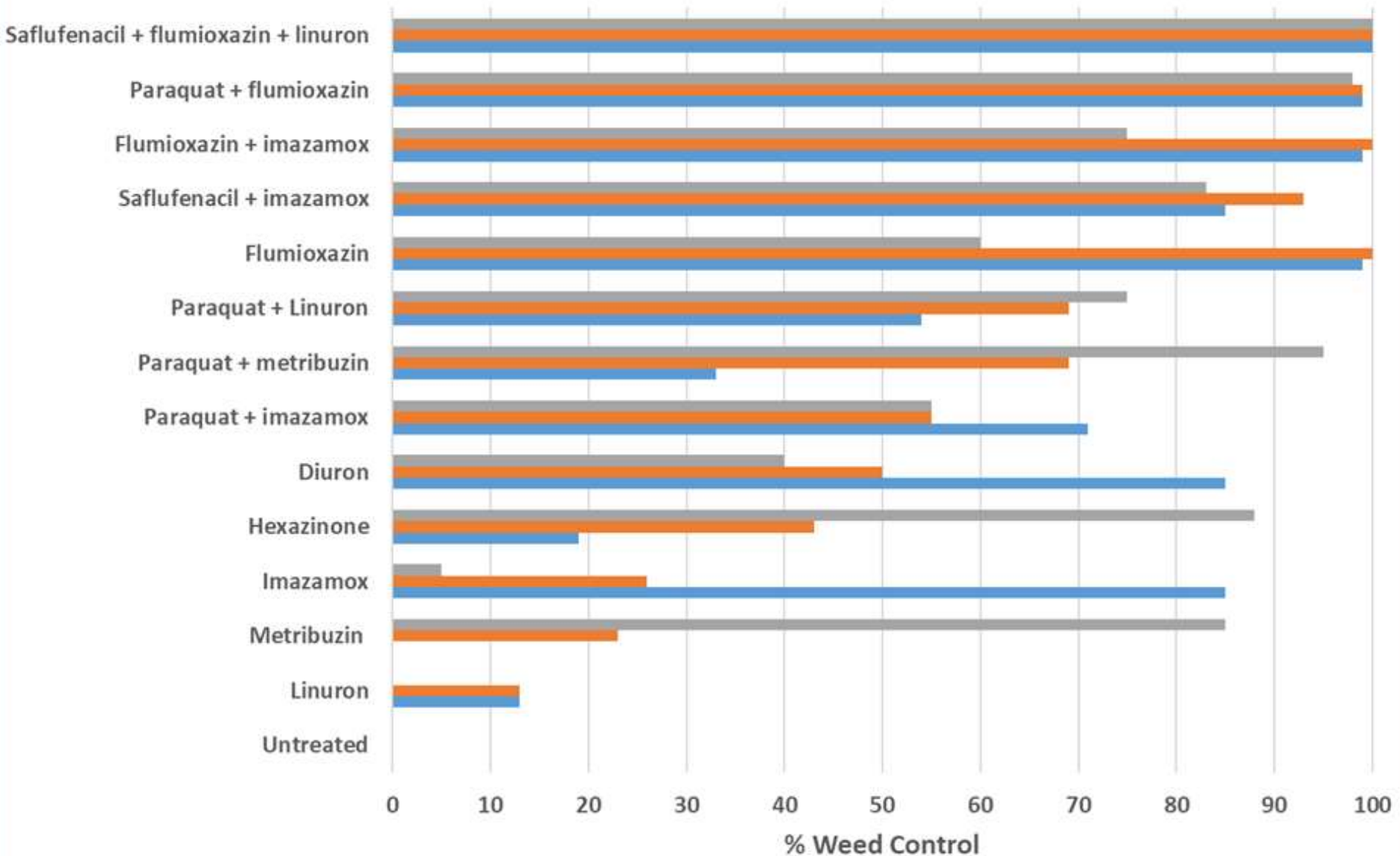






Figure 2. Weed Control from Late February Applied Herbicides  
60 Days after Treatment near Tulelake in 2024

■ prickly lettuce      ■ flixweed      ■ Shepherdspurse



# Tricor + Gramoxone



# Tricor + Gramoxone



Gramoxone 25c apt  
+  
Tricor 75DF Dec 16  
+  
N15

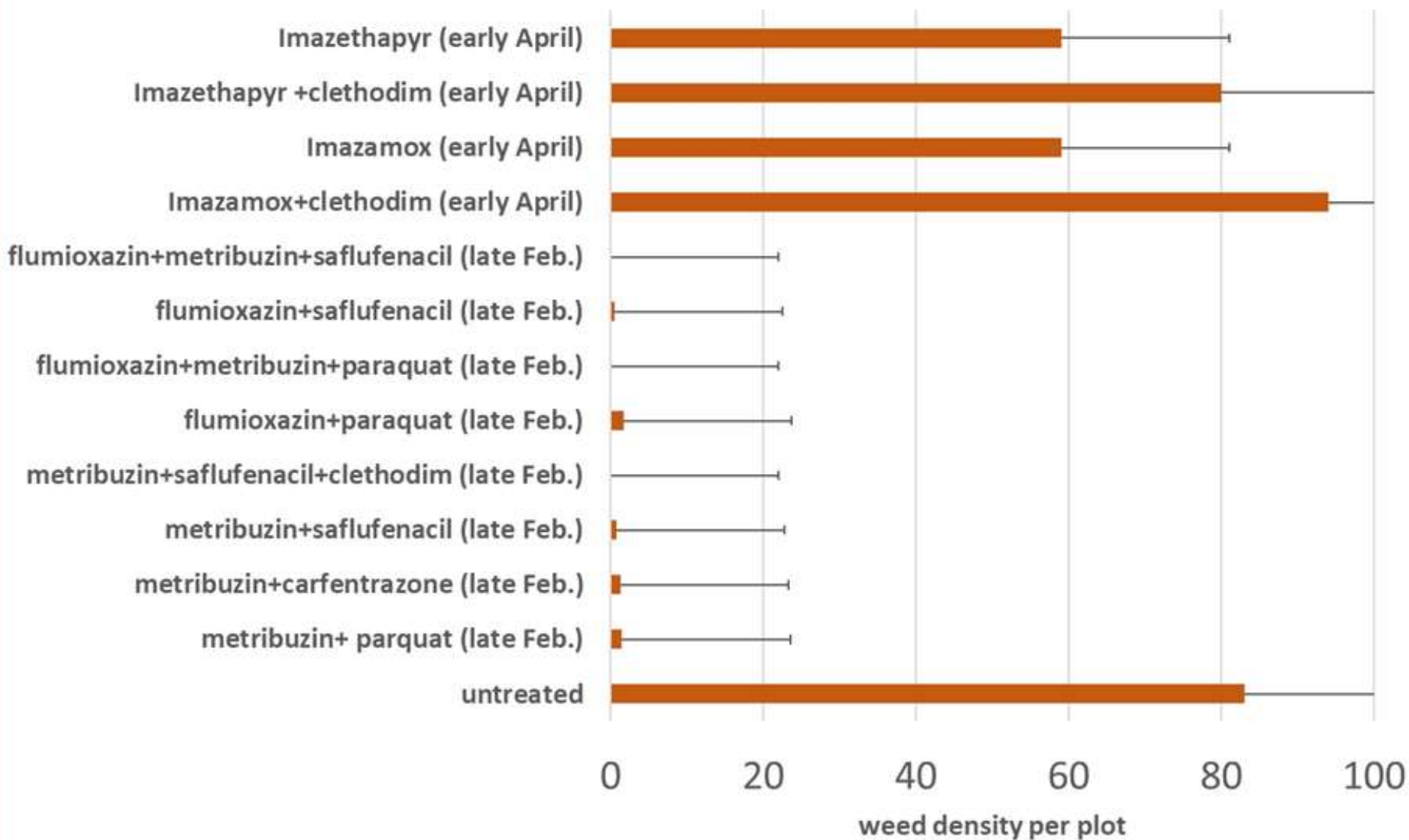


# Raptor



# Figure 3. Flixweed Density in May near Tulelake in 2021

(application timing is shown in parentheses)



# Chateau (Tuscany) + Gramoxone



# Chateau (Tuscany) + Gramoxone



# Raptor + Chateau (Tuscany)



# Raptor + Chateau (Tuscany)



Raptor 591 ac  
+  
Chateau 52 491 ac  
+  
10150

# Summary

- Consider treating in the fall especially if you irrigate after last cutting and have a lot of emerged weeds at last cutting
- Saflufenacil (Sharpen) gave good weed control in fall; erratic weed control with late winter applications; does not control grasses so I recommend using a preemergent with grass activity with fall Sharpen applications
- Flumioxazin + paraquat can be an effective alternative to metribuzin + paraquat (winter application timing)
- Imazamox (Raptor) provided good control of shepherdspurse at all timings but poor control of flixweed mustard when applied in late winter or spring
- Imazamox + Flumioxazin was the best late winter treatment for controlling large mustard weeds
- Be very cautious switching to a herbicide program that lacks activity on grass weeds; in most situations grass weeds will quickly dominate the field
- Roundup Ready alfalfa is an effective alternative; I predict it will likely dominate alfalfa acreage in our region in coming years especially if we lose paraquat

Questions?

