

# Runners and weed control in strawberry – how to manage without Reglone (dikvat)

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**Norsk** **Innlandet**  
**Landbruksrådgiving**

Many years of chemical use of Reglone have kept  
strawberry fields clean



From 2020 –Reglone has been banned – now  
situation is uncertain

**What to do now?**



# Suggestion to a solution

- Many ideas have been discussed
- Also mechanical alternatives
- Different chemical products is being evaluated but so far no «quick fix»
- Several projects are ongoing - Interreg
- Right now we are looking into a combination of mechanical and chemical approach
- BUT- it is expensive to handle for growers!

# Chemical trials against weeds/runners

- Trials 2019 and 2020 Norway/Sweeden
- Tested different products in field
  1. Pelargonacid - Finalsan and Belokha
  2. Spotlight (karfentrazon etyl) before blossom and after harvest
  3. Maister after harvest
  4. Gozai – year of plantation -runners
  5. Regalis Plus against runners-year of plantation

# 2 Trials in Norway 2019 (spring)

2 weeks after Spotlight



Non sprayed 2  
weeks after spraying



# Effect of Spotlight/Finalsan 2019

- Spotlight -good effect against runners and several weeds Spotlight - no effect against gras weed
- Spotlight –small differences between dosis 250/500 ml/hektar
- Finalsan –very limited/no effect no matter the dosis
- Conclusion –promissing for Spotlight

# Trials Norway 2020

- Ingen approval for Spotlight before harvest/blossoming – lack of residue data
- Trial 2020 after blossom 2 dosis Spotlight
- 400 ml and 800 ml pr hektar
- Organic acid– Belokha was tried before blossoming in 2 dosis (8 and 16 liter/hektar)
- In addition also the product Maister(foramsulfuron + jodsulfuron) after harvest



# Trial plan 2020

Leddliste U21.01.029. Væskemengde 25 l/daa

Væskeblanding 3,5 kg

Væskeforbruk: 1,5 kg

Ledd	Prep. nr.	Verksamt stoff	Handelsnamn	g.v.s./ daa	Preparat/ daa	Spr. tid	Vekt i kg Før – Etter = Forbruk
1	-	Usprøyta	-	0	0	-	
2	1463	karfentrazon-etyl	Spotlight Plus	2,4	40 ml	B	
3	1463	karfentrazon-etyl	Spotlight Plus	4,8	80 ml	B	
4	1463	karfentrazon-etyl	Spotlight Plus	2,4	40 ml	B	
	1463	karfentrazon-etyl	Spotlight Plus	2,4	40 ml	C	
5	1534	pelargonsyre	Beloukha	544	800 ml	A	
	1534	foramsulfuron	Maister		15 gr	B	
6	1534	pelargonsyre	Beloukha	544	800 ml	A	
	1463	karfentrazon-etyl	Spotlight Plus	2,4	40 ml	B	
7	1534	pelargonsyre	Beloukha	1088	1600 ml	A	
	1463	karfentrazon-etyl	Spotlight Plus	2,4	40 ml	B	

Spraying time:

A: Før blomstring langs dekkekant på ugras evt. også på nye utløpere

B: Etter høsting på ugras langs dekkekant og på utløpere

C: 4 uker etter høsting

# Trial with Belokha pelargonacid in May 2020



# Spraying 27. Mai in ca. 20 degrees



# conclusion Belokha

- 1 week after spraying –only small visuable effect by Belokha – burnt edge of leafs on runners
- At time of registration 10 days after spraying, no satisfactory effect from Belokha
- Better effect by 2 times Belokha?
- Earlier spraying in May?

# Spraying Spotlight og Maister

- In August sprayed 2 concentrations of Spotlight (400/800 ml/hektar) after harvest
- Sprayed one trial with Maister in full dosis
- Huge growth of gras/weed and runners in field
- Good temperature og sun at time of spraying
- Visually better effect by strongest concentration of Spotlight – good effekt against *polygonum aviculare* –no effect against gras weed
- Limited effect of Maister on runners– effect on gras weed

**Foto 13. august**

**Plot 404 is Spotlight in  
dosis 800 ml – plot 301 is  
non sprayed**



# Conklusion after harvest

- Spotlight some effect against runners, but leaf does not seem to die out like in trial spring 2019.
- Spotlight has limited effect on several weed species— calls for a need of several different chemical substances to control full grown weed in strawberry.
- Maister -no helpfull effect on strawberry runners.

# Conklusjon norwegian trials

- Spotlight -best effect in springtime (trial 2019)
- Not satisfactory effect in lower dosis by Spotlight after harvest (2020)
- Belokha -no effect by one time spray in spring
- Maister -no effect against runners– can be useful against some different weeds after harvest
- Spotlight interesting in new plantation during summer against runners and some weeds
- A mix of several products more effective?



# Trials in Sweeden 2020 - Interreg

- 3 trials in strawberry – only on runners
- Products Gozai, Belokha og Spotlight
- Same dosis Spotlight like Norway trials
- Belokha same dosis as highest Norwegian
- All trials compared with Reglone effect

# Försök i Östergötland

- Dubbelrader på plastlist
- Jordgubbar sorten Faith planterade 21 maj 2020
- Behandlat 21/8 och 1/9
- 400 l vatten/hektar, avskärmad sprututrustning



# Resultat Östergötland

- Vid bedömningen 28 september på alla revplantor är **alla led signifikant sämre än behandlingen med Reglone**
- **Spotlight Plus 2 gånger** med 0,4 l hade **bäst effekt** av alla testade behandlingar
- Spotlight Plus som **enkelbehandling** hade **dålig effekt** vid alla avläsningarna i båda doserna 0,4 och 0,8 l/ha
- I detta försök **ingen skillnad** i effekt mellan leden som fått Beloukha följt av Spotlight och **”tvärtomledet”** med Spotlight Plus följt av Beloukha
- Behandlingarna med **Gozei** hade **dålig effekt** i detta försök

# Försök i Skåne bar mark

- Jordgubbar sorten Honeoye planterade 27 april 2020
- Behandlat 12/8 och 21/8
- 400 l vatten/hektar, avskärmad sprututrustning



# Resultat Skåne friland

- **Gozai klart bästa** effekt på utlöpare
- **2 behandlingar med Spotlight** god effekt
- Även 2 behandlingar med **Belouka först följt av Spotlight** god effekt
- Spotlight en behandling och Spotlight följt av Belouka sämre effekt
- **Reglone dålig effekt** i detta försök

# Försök i Skåne plastlist

- Jordgubbar sorten  
Sonsation planterade  
1 april 2020
- Halm mellan raderna
- Behandlat 19/8 och 31/8
- 400 l vatten/hektar,  
avskärmad sprututrustning



# Resultat Skåne plastlist (plastdekket rad)

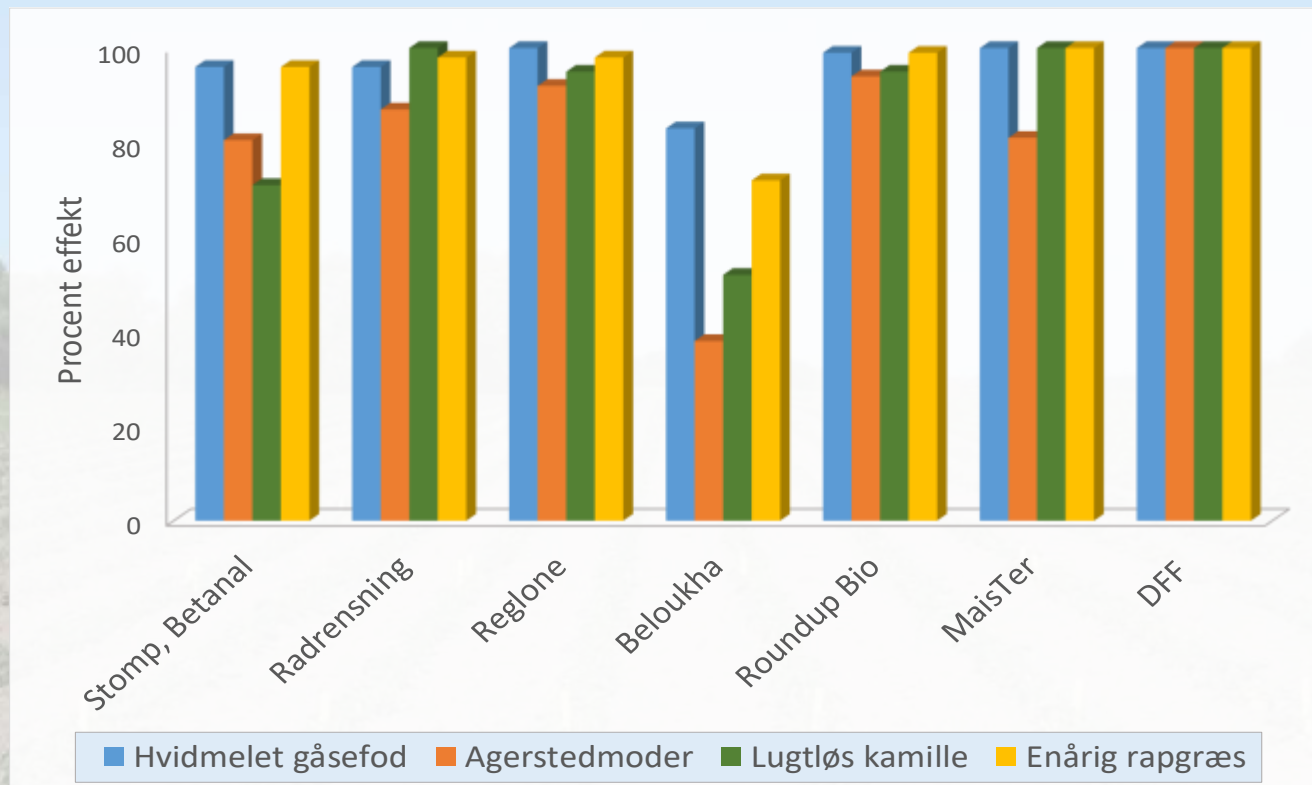
- Referensledet Reglone + Väto hade sämre effekt än väntat.
- Sammantaget är Gozai den produkt som visat mest potential för att hämma tillväxten hos revplantor som ersättare till Reglone.
- Ingen signifikant skillnad mellan de andra behandlingarna
- Spotlight Plus en behandling svag effekt och ingen skillnad mellan doserna
- Två behandlingar bättre än en
- Att börja med Belouka följt av Spotlight plus verkar bättre än tvärtom

# Trials in Sweeden with Regalis Plus

- Regalis Plus – (prohexadione-calsium) growth regulation product
- Approval in top fruit
- Testet by Agrolab against runners in new plantation in Skåne 2020
- Compared effect with Reglone and Spotlight
- Resultat: Regalis Plus better effect against runners than Reglone or Spotlight!



## Roundup, Maister og diflufenican har i 3 års forsøg virket godt overfor ukrudt mellem rækker af jordbær



Men også medført tydelige skader...



Roundup Bio



Diflufenican

Konklusjon DK: Hverken MaisTer eller diflufenican har nogen væsentlig effekt overfor jordbær udløbere, som derfor skal bekæmpes mekanisk eller med andre midler. For eksempel med Gozai (Mizukii), hvis den godkendes.



# Mechanical alternativ

- What alternativ do we have
  1. Row milling machine – bearbeider også jorden
  2. Movers –enkle plenklippere eller større klippemaskiner
  3. Row cleaners påmontert forskjellig utstyr – kun mot smått ugras
- Some growers are modifying machines to adapt to their production

# Milling machine



Foto: Annemarie Bisgaard



## Modified potato grass mover



# Modified mover for gras land



# Effekt av klippemaskin en tid etter klipping – nyttes kun etter høsting





# Forsøk så langt

- Flere forsøk planlegges i 2021 –Interreg
- Spotlight kun en dispens i Norge/Sverige
- Søkt MU –men ikke før høsting
- Gozai ingen restdata i jordbær
- Regalis plus –søke MU etter høst/planteår?
- Prosjektet Solutions i Norge skal også se på effekt av ulike mekaniske alternativ