

POTATO VINE KILL

- Desiccation products labeled for use in potatoes include:
 - Reglone® and other trade names (diquat)
 - Rely® and other trade names (glufosinate-ammonium)
 - Aim® (cafentrazone-ethyl)
 - paraquat (various trade names)
 - Vida® (pyraflufen-ethyl)
 - sulfuric acid (usually 93 or 97% concentration; by custom applicator and in certain states only)
- In general, application timing is recommended to occur at the beginning of natural senescence.
- In order to thoroughly cover and penetrate foliage, some products require 20 to as much as 50 gallons per acre carrier volume. A dense potato canopy would require volume in the upper range.
- Make sure to include the adjuvants required e.g. ammonium sulfate with Rely; nonionic surfactant with diquat; read the various labels for use rates and timing, cautionary remarks, etc.



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- Vine kill is related to speed of desiccation needed**, tuber skin set, specific variety characteristics, among other needs such as *late-season weed control, or desire to kill in order to prevent disease translocation from foliage and stems to tubers.*
- University of Idaho vine-kill research:**
 - 28 to 30 GPA carrier volume.
 - Treatments applied before 5% natural senescence.
 - Vines were not flailed/beaten/rolled before application.
 - Both leaf and stem desiccation rated.
 - Russet Burbank in most trials but products have been tested with similar results on Ranger Russet and Alturas.



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In general, overall leaf and stem desiccation speed:
Sulfuric acid > Reglone ≥ Rely + Aim or Vida (or Reglone) > Rely not tank-mixed.

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- "Fast kill"** attained with **sulfuric acid**.
 - Can provide 95 to 100% desiccation of leaves and stems as quickly as **three days** after application.
- "Fast- to moderately-fast kill"** - **Reglone**.
 - 95% or greater desiccation of leaves, and 90% or greater stem desiccation by 1 wk after application.
 - Results with paraquat have been similar... (note that paraquat cannot be used for potatoes going into storage or used for seed).
- Rely** can provide approximately 90% leaf desiccation by 1 wk after application, however, stems may only be 70% or less desiccated at that time.
 - Stems tend to stay green longer with this product than the others labeled for use in potatoes.
- When **Rely** was **tank-mixed with Aim or Vida** (or a lower rate of Reglone than what is made in a stand-alone treatment), then speed of stem desiccation increased to as much as 90% visible by 1 wk after treatment.



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Sulfuric acid (97%) 30 GPA 7 days after application to Russet Burbank



Non-treated check on left vs. Reglone at 1.0 GPA + 0.25% v/v nonionic surfactant 10 days after application to Russet Burbank



Rely 280 at 2.1 GPA + 3.75% ammonium sulfate 7 days after application to Russet Burbank. NOTE: leaves are desiccated while most stems are still green at this time.



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POTATO VINE KILL SUMMARY

2015 general vine-kill recommendations:

- Do not flail/beat/roll before vine-kill product application
 - No hard data at this time to support the idea that spores are distributed with this type of mechanical operation.
- University of Idaho vine-kill research has shown:**
 - Sulfuric acid > Reglone ≥ Rely + Aim or Vida (or Reglone) > Rely not tank-mixed.
- Make sure to follow label for surfactants, carrier volume, etc.
 - Sulfuric acid most likely will kill late blight spores while the other vine kill products will not.
- NEXT YEAR:**
 - Hairy nightshade and other nightshade weed control season-long so that this alternative source/host for late blight is not available.
 - Hairy nightshade can germinate and grow the entire season, even under the potato canopy.
 - Volunteer potato control information will be provided at the 2016 University of Idaho Potato Conference in Pocatello, ID.



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