

# Steam Weed Control A Proven Propane Solution



**Robert Jacobs**, *Delta Liquid Energy*  
PERC Agriculture Advisory Committee Chairman


# How it works...

Stinger creates steam at 806° F (430° C) in one-pass heat exchanger

- Steam dramatically reduces fire risk
- Steam condensing raises heat transfer efficiency
- Utilizes available water sources, same as those for spraying




# What Growers are Saying...



"We've used the Stinger on several rows, and it has completely destroyed the weeds. We did not see any regrowth in the treated rows for several weeks."

*-Bill Dickard, Columbia Crest Vineyard*

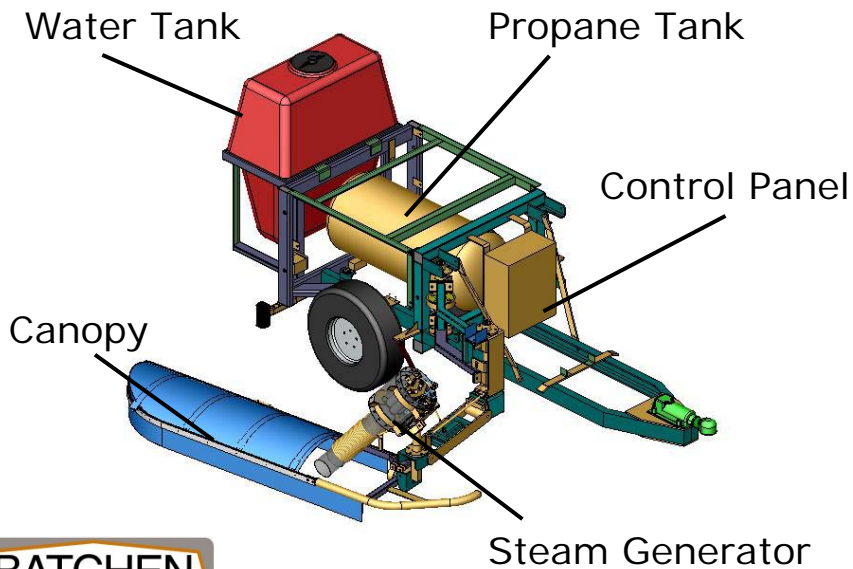
# What Growers are Saying...

A silhouette of a farmer operating a Ford tractor with a Stinger implement in a field at sunset. The tractor is a blue Ford model, and the Stinger is a large, white, rectangular implement. The farmer is wearing a white shirt and a cap. The background is a bright orange and yellow sunset sky over a dark field.

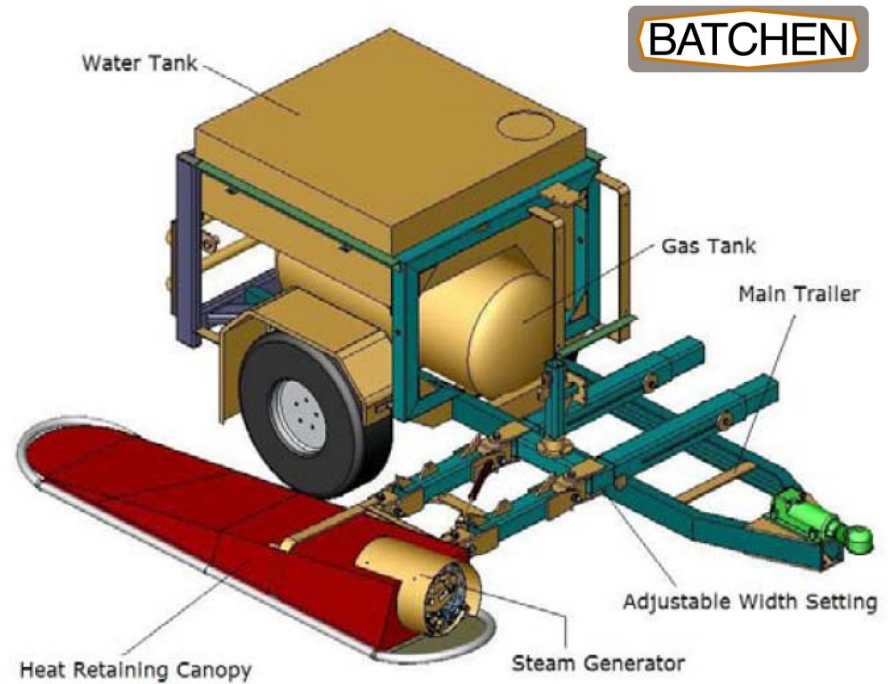
"The Stinger should be a great cost and time savings in my organic operation – eliminating the need for disking in the fall, as well as the additional clean up in the spring."

*-Mike Naylor, Naylor's Organic Peaches*

# Stinger Makeover



Before

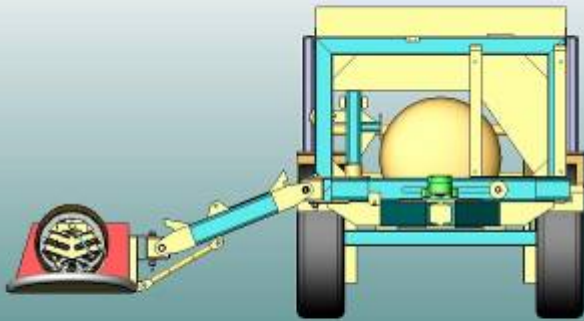


After

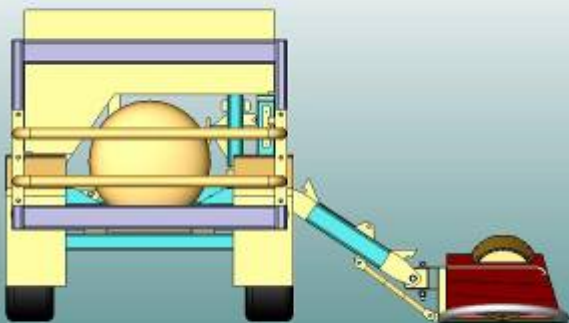
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# Stinger Trailer Specs

Front



Rear



Height	4'4" (1.3M)
Minimum Operational Width	6'3" (2.1M)
Extended Operational Width	8'6" (2.6M)
Total Length	10'4" (3.1M)
Weight	2464 lbs (1120 kg)
Turn Angle	80 degrees
Ball Joint	STD 2"
Wheels	14" x 5 stud
Tire Size	185R14C 102/100P

# Steam-Quenched Combustion

Gas & Water Consumption	Will vary according to ambient conditions
LP Gas	Propane or up to 50/50 butane
	6.9 gallons/hour (26L/hour)
Water	34.5 gallons/hour (130L/hour)
Opening Temperature	750-840° F (400-450° C)

# Storage Capacity

LP Gas Tank - 7 hours running time	46.25 gallons useable (175L)
	Fitted with AFL valve
Water – 3 hours running time	121 gallons (460L)
Water Pump	Schulz 12 volt
	150 psi

# Proven Results

**PROPANE**  
EXCEPTIONAL ENERGY<sup>®</sup>



# Control Features

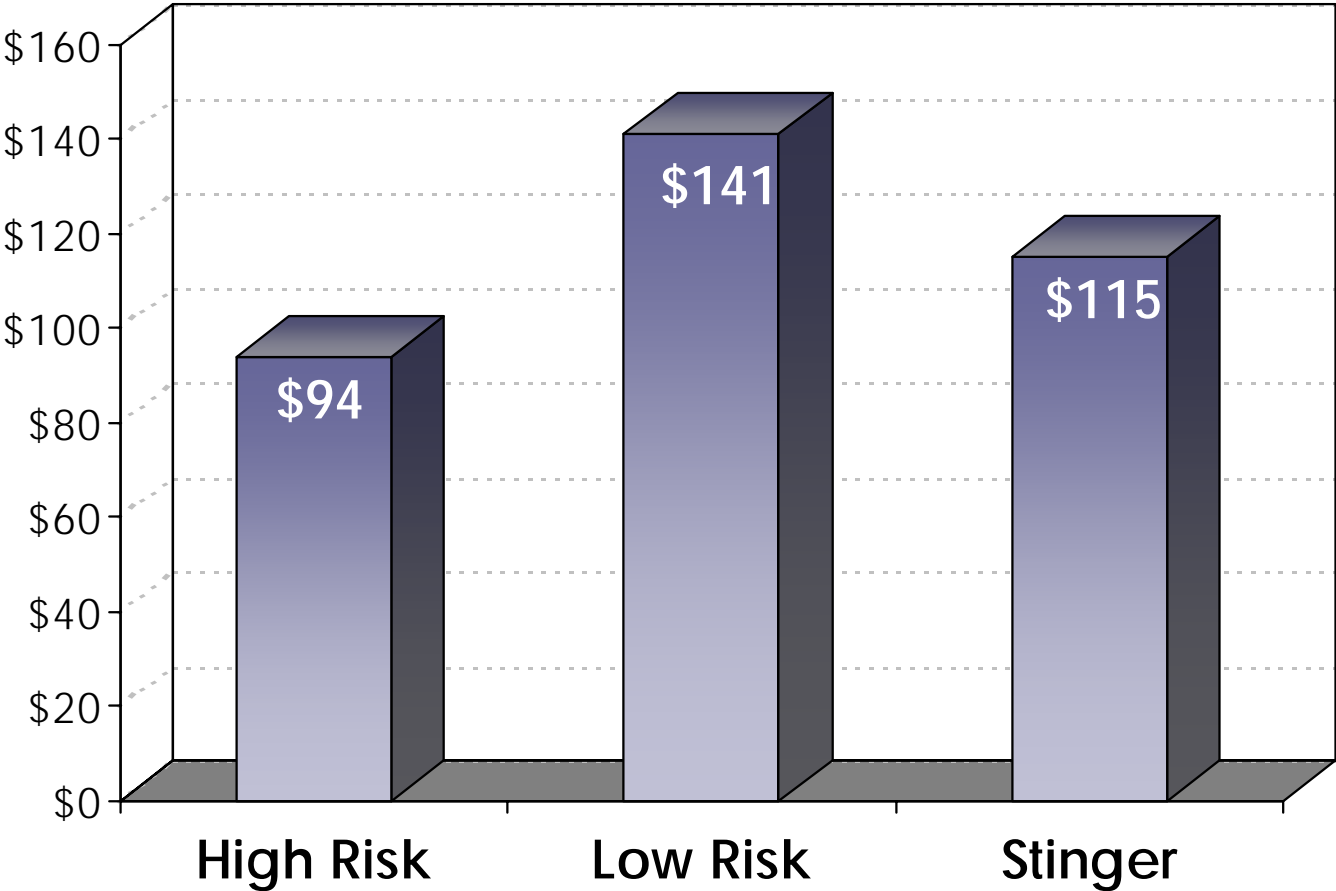
- 12 volt, max current 20 AMPS
- 90-second start-up procedure
- Automatic shutdown on the following:
  - Low water
  - Rollover of trailer
  - Over temperature in generator
  - Flame failure
  - In low fire operation for 2+ minutes

# Control Features, cont'd

- Automatic temperature control
- Stinger steam generator returns to low fire if machine remains stationary for more than 5 seconds
- Optional manual override when maneuvering
- System control from cabin of tow vehicle



# Cost Comparison



# Cost Comparison, cont'd

- On a 200 acre ranch, the Stinger will save \$4,000 over other Low Risk weed control programs, paying for itself in 4.5 years.
- On a 500 acre ranch, the Stinger pays for itself in less than two years.



# Application Benefits

- Treatment is less dependent on weather conditions
- Spray drift issues are eliminated
- Weeds cannot build up resistance
- Only 1 water refill required in a 7-hour work day



# Safety Benefits

- Ability to treat weeds without chemicals near environmentally sensitive areas
  - Streams
  - Housing
  - Adjacent neighboring crops
- Rollover protection and automatic shut-off devices
- Each to operate without need to mix or measure anything



# Management Benefits

- There are no issues with human exposure to chemicals
- Workers can reenter the field immediately after treatment
- No harvest delays
- Reduce soil erosion where cultivation might be required to control weeds
- No permits required
- No PCA needed



# Propane Benefits

**PROPANE**  
EXCEPTIONAL ENERGY™

- It is insoluble and nontoxic
- Not harmful to soil or water
- Portable high-energy output per pound adds to the effectiveness



# Organic

Thermal weed control and other propane-powered weed control methods are recognized organic production practices



For More Information . . .

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