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Flame Weeding for Agronomic Crops

Current Topic

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Prior to the 1950s, before modern herbicides became available, flame weeders were often used to control weeds in cotton, sugar cane, grain sorghum, corn, and in orchards. More recently, flame or thermal weeding has resurfaced in parts of the U.S. as an alternative to chemical weed control.

Weeds are most susceptible to flame heat when they are young seedlings 1–2 inches tall or in the 3–5 leaf stage. Broadleaf weeds are more susceptible to flaming than grasses. Repeated flamings may be necessary on grassy weeds for effective control.

Flame weeding can be used before and after germination of the crop. Effective pre-emergent flaming requires good timing. The operation must be done after a flush of young weeds appears but ahead of significant crop emergence.

Post-emergent flaming is accomplished either by cross-flaming or by parallel-flaming. In cross-flaming, burners are set on either side of the crop row, in a staggered pattern, with burners oriented perpendicular to the row, so that the combined flames cover the entire drill area. In parallel-flaming, burners are again set on either side of the row, but the flames are oriented parallel to the row.

Costs associated with flame weeding can vary. Flamers have been built for $1,200 for an eight-row unit (1) and $1,520 for a 12-row unit (2). Commercial kits cost around $1,900 (the price for an eight-row from Thermal Weed Control Systems). These kits do not include hoses, a tank, or a tool bar. It is more cost-effective for growers to pick up these items locally from a gas dealer or salvage operation.

LP gas usage depends on ground speed but generally runs around 8–10 gallons per acre, according to sources at Thermal Weed Control. When compared to some herbicide treatments, flame weeding is more economical.

A number of publications on flame cultivation are enclosed for your review. Thermal Weed Control Systems, Inc. (3) of Neillsville, WI, and Flame Engineering (4) of LaCrosse, KS, are two flame weeding companies that can provide technical assistance and equipment. They may also be able to put you in touch with farmers who practice flame weeding.

References

1) Anon. 1993. Arkansas Farmer builds flame weed cultivator. Farm Show. March–April. p. 16.

2) Houtsma, J. 1991. Fighting weeds with fire. The Farmer. June. p. 10–11.

3) Thermal Weed Control Systems c/o Ron Jones
N 1940 State Highway 95
Neillsville, WI 54456
715-743-4163
jonesconsulting@tds.net

4) Flame Engineering, Inc.
P.O. Box 577
West Highway 4
LaCrosse, KS 67548
800-255-2469
785-222-2873
flame@flameengineering.com
http://www.flameengineering.com

Enclosures

Anderson, Lee. 1999. Weed problems go up in smoke. Acres USA. May. p. 1, 8–10.

Anon. 1993. Arkansas farmer builds flame weed cultivator. Farm Show. March–April. p. 16.

Anon. No date. Hot tips for flame weeding. Steel in the Field Sampler. Web page.

Cook, Klyn. 1995. They're flame-kissing their weeds good-bye. Mid-South Farmer. May. p. 30, 32, 42.

Gullickson, Gil. 1993. A burndown treatment—really! The Farmer. June. p. 10–11.

Houtsma, Jim. 1991. Fighting weeds with fire. The Farmer. June. p. 10–11.

Parker, R.E. 1965. Flame Cultivation Equipment and Techniques. Mississippi Agricultural Experiment Station, Agricultural Research Service. Production Research Report No. 86. 16 p.

Thermal Weed Control Systems, Inc. Promotional Information. 4 p.

Thermal Weed Control Systems, Inc. No date. Flame weed control for corn, soybeans, potatoes, grain sorghum, onions and others. 4 p.

The Electronic version of **Flame Weeding for Agronomic Crops** is located at:
HTML
http://www.attra.org/attra-pub/flameweed.html
PDF
http://www.attra.org/attra-pub/PDF/flameweed.pdf