

Demonstrating pre-and post-scarification herbicide applications to suppress grass competition in a scarified koa seed bank regeneration strategy

- Purpose:** Develop an operational strategy that couples large-scale scarification with grass suppression to restore koa forest at the Kona Hema Preserve.
- When:** Pre-scarification treatment applied February 26 2008. Post-scarification treatment applied June 10, 2008.
- Where:** Kona Hema Preserve.
- Methods:** Herbicide treatments were applied with a KLC-5 Fieldjet® boomless spray tip (Teejet® Technologies, Wheaton, IL) (4 m swath spray pattern) delivered from a Shurflo® 12V diaphragm pump calibrated to apply 60 L ha⁻¹ (6.4 gal A⁻¹) @ 15 psi and a walking pace of 1 m s⁻¹. This spray system was designed for ultra-low volume herbicide applications in difficult terrain, allowing the applicator to be hands-free for balance and with the spray tip mounted in the back to minimize herbicide contact.

Herbicides applied for demonstrating grass control within Kona Hema

Tradename	EPA registration #	Active ingredient	Rate	Manufacturer
Habitat®	241-426	Imazapyr	1 qt/A (0.5 lbs ae/A)	BASF Specialty Products
Roundup Original Max®	524-539	glyphosate	1 qt/A (1.13 lbs ae/A)	Monsanto Company
Fusilade® DX	100-1070	Fluazifop-p-butyl	24 fl.oz./A (0.18 lbs/A)	Syngenta Crop Protection Inc.

- Results:** Imazapyr and glyphosate have demonstrated more effective grass suppression than fluazifop. However, fluazifop is very effective in suppressing understory grasses and has the added value of selectivity where broadleaf plants (i.e. koa, ohia, etc...) are tolerant to topical foliar applications. Glyphosate was effective in suppressing grasses, but because it is a broad-spectrum herbicide it can not be used for post-scarification grass suppression. In our recent studies, koa has shown higher levels of tolerance to imazapyr. Imazapyr is as effective on grass suppression as glyphosate and has shown to be selective, creating opportunities for pre- and post scarification grass suppression treatments.

- Contact:** James Leary
Invasive Weed Management
College of Tropical Agriculture and Human Resources
Phone: 808-956-9268
Email: leary@hawaii.edu
Web: <http://www.ctahr.hawaii.edu/LearyJ/index.html>