Forage Kochia Helps Fight Range Fires

Forage kochia greenstrips have a successful reputation in retarding Western rangeland wildfires.

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Rangeland wildfires in the Intermountain West have dramatically increased since 1979, placing a major economic burden on private and public land managers to control or suppress these fires (Pellant 1990).

Perhaps more important is the loss of natural resources and degradation of ecological sites and ecosystems that result from repeated burning. Frequent wildfires prevent the establishment of native shrub, forb, and perennial grass plant communities and increase the dominance of invasive annual weedy species.

One of the major contributors to increased wildfires is cheatgrass (*Bromus tectorum*), which inhibits the establishment of native perennial species through competition for moisture. Cheatgrass currently occupies many burned and disturbed western rangeland sites and provides an early maturing, fine textured fuel that increases the chance of ignition as well as the rate, spread, and frequency of wildfire (Whisenant 1990).

Reports not only indicate that forage kochia reduces flame length and intensity, but can also suppress or even stop wildfires.

Forage kochia (*Kochia prostrata*) has been planted in greenstrips (e.g. vegetative fire breaks) in an attempt to combat frequent rangeland wildfires in areas invaded by cheatgrass. Forage kochia is native to the arid and semiarid regions of Central Eurasia and is widely adapted to the Intermountain West and Great Basin regions. It is being used extensively on arid to semiarid rangelands that have sandy to clayey textured soils, are moderately to strongly alkaline and receive 6 to14 inches of annual precipitation. 'Immigrant' forage kochia was released in 1984 and is currently the only commercially available cultivar in the United States.

Information on the fire suppression characteristics of forage kochia exists in symposium proceedings and in-house reports, but there are no published research findings in peer-reviewed scientific journals. Thus, we have reviewed available research findings and conducted telephone interviews to assess the ability of forage kochia to suppress wildfires. Our purpose is to summarize forage kochia's greenstripping utility and to suggest future research needs. This information will benefit land managers who continually deal with rangeland wildfires.

Historically Greenstripping Shows Promise

In 1946, Platt and Jackman proposed planting fire resistant species into strips to disrupt the fire cycle and restore native plant communities on cheatgrass infested rangelands. These fuel breaks have successfully contained wildfire in chaparral communities of Southern California.

In 1985, the Bureau of Land Management (BLM) implemented a wildfire pre-suppression program called "greenstripping" (Pellant 1994). In this program, 30 to 400 feet wide strips of selected plant materials known to reduce and/or suppress the spread of wildfires were established on landscapes prone to repeated burning. By 1992, the BLM had installed 451 miles of greenstripping and it is estimated that another 200 miles have been established since. For example the Utah BLM Fillmore Office has planted 34 miles since 1994. Most of the initial greenstrips averaged 300 feet in width and were seeded along highways or railroads to reduce human-caused fires.

According to Pellent (1994) greenstrip effectiveness depends upon:

(1) disrupting fuel continuity;
(2) reducing fuel accumulation; and
(3) maintaining plants with high moisture content.

Thus, fine fuel loads within greenstrips are modified by replacing flammable vegetation that readily ignites and carries a fire with perennial, less flammable vegetation.