

Water Quality Enhancement Activity – WQL01 – *Biological Suppression and Other Non-chemical Techniques to Manage Brush and Invasive Species*



Biological Suppression and Other Non-Chemical Techniques to Manage Brush

This enhancement is for the reduction of invasive species and/or woody brush using physical and or biological control methods. Physical methods include pulling, hoeing, mowing, mulching or other similar methods. Biological methods include use of natural enemies either introduced or augmented. Use of chemicals is prohibited with this enhancement.

Land Use Applicability

This enhancement is applicable on pasture, rangeland, and woodland in which an invasive plant and/or brush problem exist.

Benefits

Environmental benefits will be site specific. Benefits may include but are not limited to improved water quality achieved through eliminating the use of synthetic pesticides resulting in no chemicals in surface runoff or leaching into the soil profile. Air quality will see similar impacts by eliminating chemical drift and volatilization. Controlling invasive species and/or brush will allow native plant communities to return and improve wildlife habitat.

Criteria

- 1) Develop a plan for managing invasive and/or brush that includes:
 - Assessment of existing conditions
 - Identify strategies for control
 - Control methods selected
 - Monitoring and evaluation process
 - Operation and maintenance follow up activities
- 2) Implementation of this enhancement requires the use of biological and/or physical pest suppression techniques instead of pesticides. These techniques, used individually or in combination, can include activities such as:
 - Grazing animals (primarily through the use of goats) to target undesirable vegetation.
 - Introduction of beneficial insects to attack undesirable vegetation.
 - Introduction of beneficial micro-organisms to attack undesirable vegetation.
 - Hand removal or cultivation



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- Mowing or cutting
 - Use of heavy equipment in areas with well established, dense brush cover
- 3) Biological suppression techniques should be based on techniques recommended by the local Land Grant University.
 - 4) Biological suppression must be preceded by an analysis to ensure the proposed biological agent is compatible with the agronomic, ecological and social objectives of the operation.
 - 5) Operation and maintenance activities must be followed to ensure regrowth or resprouting is controlled. Additional treatment of individual plants or areas needing retreatment should be completed as required to effectively controlling the targeted species.

Documentation Requirements

Written documentation for each treatment area and year of this enhancement including:

- a. A full description of all biological and/or physical suppression techniques utilized include:
 - Method (s) of control used
 - Area (s) on farm control methods were applied
 - Number of animals or insect colonies distributed and the planned time frame of the treatment.
 - Photograph (s) of treatment applied
- b. A map showing where the activities were applied including treatment acreage



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Using Goats for brush control

To meet requirements:

1. The brush is either low growing or is reduced to low growth by mechanical means.
2. Recommended stocking rate of either:
 - a. 1 goat/acre per % of brush cover
 - b. 1.5 nanny goats or 4 to 5 stocker goats/acre of solid brush or weeds

References

Kerr Center for Sustainable Agriculture, Poteau, OK
American Institute for Goat Research at Langston University, Langston, OK