

Reseeding after Klamath Weed

areas cleared of weed by beetles may require a reseeded program to restore valuable forage plants

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Reduction of thick Klamath weed stands by the imported leaf-feeding beetles in certain California counties may bring about the problem of reseeded desirable forage plants.

In dense stands the Klamath weed has crowded out nearly all the valuable forage types. The only grasses able to withstand the competition are inferior winter annuals which are of little forage value, even when green.

As seed of the better forage plants will not be present for natural reseeded, space vacated by the Klamath weed—under the action of the beetles—could only be filled by the inferior forage types.

Native perennial grasses might gradually return in some cases but the process would be slow and uncertain.

A range seeding and management program is the obvious solution to this problem and may become one of the focal points of Klamath weed control.

Ranchers should be aware of this side of the problem and recognize that the beetles are not the complete solution. Good management, such as seeding, rotation or deferred grazing, and supplemental feeding will be necessary for efficient weed control.

Best conditions for reseeded will occur only once in any one stand. This is when a large mass of the aggressive weed is removed and when other plant competitors are few.

Seeding in such situations offers an excellent possibility of replacing Klamath weed with a valuable forage cover at a minimum cost. Studies are being conducted to determine the possibilities of a program of this kind.

Reseeding Studies

Experimental reseeded, at the present time, has revealed that certain forage plants are able to live and compete with Klamath weed under range conditions.

Several plots have been established with burnet using only light cultivation as ground preparation.

Burnet, with its deep taproot, survived competition with the Klamath weed and even after ten years it was maintaining itself.

On other seedings, chewing fescue and highland bentgrass were used as competitive plants. In this case a heavy stand

of Klamath weed was plowed in the summer and then seeded to these grass species in the winter. The grass mixture not only made an excellent forage crop but restricted the spread of the Klamath weed. By comparing adjacent areas where plowing only was done and no seeding, the Klamath weed had returned to such a thickness that all other plants were excluded.

Highland bentgrass has shown itself to be quite adaptable when broadcast seeded with no ground preparation. By this method the bentgrass was aggressive enough to occupy the space vacated by Klamath weed during beetle feeding. Other grass species such as harding, tall fescue, and orchard grass are also satisfactory competitors under certain conditions.

Plant Competition

The problem of competition is a most important one in attempts to establish good forage species by seeding.

Experimental work in brush-burns has shown the feasibility of seeding good forage species where the competition from other plants has been largely eliminated. In the case of brush-burn, competition by the natural cover is removed by fire. Only those plants whose seeds are scattered in the ash after the burn are then able to germinate. Success in establishing valuable grasses under this type of condition has been very good.

The removal of Klamath weed from densely infested areas by the beetles presents a similar, though somewhat less favorable, situation. The only aggressive competitor remaining in such an area, Klamath weed, is suddenly reduced to a level of no competitive importance. If seeding is properly timed, good stands should result. The major difference is the lack of anything resembling a prepared seedbed, such as represented by the ash following a burn.

Observations on beetle feeding reveal that the best basis for determining the year to seed will be to follow closely the beetle density. When this density, during fall and winter, is sufficient to show con-

siderable destruction of basal leafage, seeding should be attempted.

Studies along this line and a program for observations by trained personnel are being considered.

In certain areas of all infested counties the Klamath weed does not attain a really dense stand. In some such cases, certain good forage species have managed to survive the competition with the weed. An example of this is California Oatgrass, *Danthonia californica*—particularly along seepage areas too wet for Klamath weed in both dense-stand and sparse-stand fields and along beaten cattle paths.

Under such situations, where grazing during beetle feeding is withheld, the oatgrass can increase rapidly and spread over the area by natural seeding.

Seeding probably can be done by the broadcast method much in the same way as it is after a brush burn.

The easiest way might be the use of a chest broadcast seeder. One man on foot should be able to seed at least 10 acres of the average rough range land per day—by mixing the seed in advance. In most areas of the state, rates of seeding up to 10 pounds per acre should be sufficient.

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The local office of the Farm Advisor should be consulted as to types of seed to use, the best times for seeding, and the progress of reseeded studies not yet completed.

See: "Klamath Weed Beetles" by J. K. Holloway and C. B. Huffaker, California Agriculture, February, 1949, page 3.

Ranchers searching unsuccessfully for living Klamath weed in area cleaned up by beetles. In light foreground are returning forage grasses.

