PLANT COMPETITION – THE CORNERSTONE OF WEED MANAGEMENT

Kent McAdoo, University of Nevada Cooperative Extension

Weed control should always be a means to an end, not an end unto itself. Ask yourself, if we could wave a magic wand and all of North America's weed monocultures would disappear overnight, what would that leave us? Answer: a huge void that would be rapidly re-invaded with the same weeds or worse. In other words, we should always begin with the end in mind, a desirable plant community that is healthy, functional, and weed resistant. If our goal is just to kill weeds, then we will literally spend a lifetime doing so! Bob Wilson, former Cooperative Extension educator in White Pine County and weed management mentor to many of us, may have said it best: "Plant competition is the cornerstone of a complete weed control program"

Plant Competition is Necessary for Effective Weed Control!

Any landowner with a weed infestation should first ask the following question: *Are there enough desirable competitive plants present on the property to promote recovery without planting if weed control and proper follow-up management is applied?* Many landowners focus so intently on weed removal that they overlook the need for desirable competitive vegetation. Without this component, weed control is typically a waste of time, money, manpower, and herbicide!

The old saying that "nature abhors a vacuum" is very appropriate in this context. Complete elimination of weeds in an area without ensuring sufficient desirable vegetation to colonize the site could result in a situation worse than the original weed infestation in just a few years. Without competition for soil moisture, sunlight, and nutrients, either the former weed infestation will move back in with a vengeance, or another weed species or combination of species will move in to fill the void. This can leave the landowner with a problem worse than he or she originally encountered.

So what exactly is sufficient desirable vegetation to colonize the site? A general rule of thumb is that areas with more than 20% canopy cover of desired vegetation can usually recover naturally if performance of weeds is hindered. (Note: Canopy cover is the area of ground covered by the vertical projection of the outermost perimeter of the natural spread of plant foliage. Small openings within the canopy are included.)

The Importance of Soil Conservation and Land Use Goals

Soil is an essential natural resource for plant establishment, and its conservation is the highest priority in those areas where seeding is necessary. Therefore, the retention and enhancement of soil should be a primary consideration in all management decisions, including seedbed preparation and choice of a seed mixture. If the planted vegetation does not establish rapidly, valuable topsoil may be lost through wind and/or water erosion, leaving the site only suitable for undesirable vegetation (weeds). When soils are mismanaged, vegetation ceases to produce as it once did, weeds again start replacing

desirable plant species, recreation and scenic values are decreased, and management options for the production of livestock forage and/or wildlife habitat become limited. **Therefore, the primary focus for weed-dominated sites is on revegetation that serves two primary functions: (1) holding the soil, and (2) competing with weeds.**

Obviously, seed mixes should be chosen with the "end in mind," as related to desired land use. Long-term land use could include any one or a combination of the following: livestock forage, wildlife habitat, hay production, esthetic value, etc. If the landowner has multiple land uses planned, the revegetation strategy should reflect this balance.

Assuring a healthy and desirable plant community following a weed control program can be as simple as selecting the appropriate weed management techniques and/or choosing the right combination of species to re-seed, along with appropriate seeding methods. There are several key factors to keep in consideration that will help meet land use objectives:

- Weed control considerations
- Seedbed preparation
- Seed mixes
- When to plant
- How to plant
- Seed depths
- Fertilizing
- Other soil amendments
- Seeding success and maintenance

We will examine these topics in more detail in upcoming articles. For more information on planting desirable vegetation to compete with invasive weeds, see Chapter 3 in University of Nevada Cooperative Extension Educational Bulletin-05-02, "Fighting Invasive Weeds – a Northeastern Nevada Landowners' Guide to Healthy Landscape" on-line at: http://www.unce.unr.edu/publications/files/ho/2005/eb0502.pdf.

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After successfully controlling an invasive weed infestation, planting desirable species to compete with invasive weeds may be necessary when few or no desirable species are present in the area.