



Comstock Seed

917 Highway 88. Gardnerville, NV 89460

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CHALLENGES TO ESTABLISHING PLANT COMMUNITIES FROM SEED

Hi folks;

Comstock Seed has been providing seed to the reclamation industry for 30 years. 80% of this seed has been planted on dryland sites throughout the Great Basin, Sierras, and Mojave, primarily on mine sites, highways, fires, utility corridors, and ski resorts. Our seed blends have included both native species and introduced species that have a record for survival in our harsh climate.

Even though we have a great data bank on species selection and performance, the ultimate success of these projects has always been dependent on a host of factors beyond our control. These factors include favorable weather, adequate soil, correct seeding technique, weed control, site security, etc.

The most important of these factors tends to be adequate and timely moisture. If the seed has been correctly placed in the surface of the soil and seed-soil contact is sufficient for the seed to imbibe moisture, germination should commence in the spring as the days lengthen and warm. Even the most drought tolerant native seeds need adequate surface moisture for an extended period to begin the process. Many spring weather cycles in the Great Basin are not cooperative with this timely and consistent precipitation to begin this process. At most, we can supplement this period with temporary irrigation to imitate this germination period. We can also improve our chances of spring germination by adding amendments that will assist in holding surface moisture and/or helping the seed to imbibe moisture. No doubt, heavy bottomland soils can retain moisture much longer than coarse sloped upland soils.

Also, we have found that even the best winters with above average snow packs are less important than the timeliness of the spring precipitation. Our best chances for natural germination occur during March even though we have had germination occur as early as February. Beyond March/April, the temperature climbs and the soil surface becomes too hot and dry and germination chances diminish. Even with irrigation, germinating seed into the summer can prove difficult as the surface dries rapidly; late germinating plants are more vulnerable to heat as shallow root systems may have not reached safer, cooler depths.

Within the soil surface, both biochemical and physiological variables are important. Seed has a difficult time imbibing moisture in coarse soils or highly organic soils as there is too much air present to allow seed to imbibe. Likewise, salt buildups can decrease the ability of seed to imbibe moisture. Ironically, many salt tolerant species can't germinate without an influx of fresh water. Once germinated though, they have qualities that can cycle salty water. Many species that germinate may immediately die after exposure to any of a host of toxic qualities including high levels of boron, arsenic, other salts, and residual chemicals in treated soils.

Generally, we are less concerned about an early influx of colonizing weeds than sites that exhibit no germination at all. Most of our common weeds are broadleaf annuals that give way over time to perennials as long as the perennials begin to develop as well. Thus, these weeds can actually be temporarily constructive for holding soils with their roots, locking up or extracting toxicity, producing organic material and giving up to later seral preferred growth. However, know your weeds as perennial and noxious weeds need prompt treatment. We are more concerned with sites that yield no germination and look to the above potential causes.

In sum, after 30 years in the business, we remain humble to the sporadic influences of nature and the infinite variety of site conditions that affect our customers. Feel free to call anytime if you have further questions.

Sincerely;

Ed Kleiner
President
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