



Developing a Bio-herbicide to Control Annual Brome Grasses

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A major obstacle to seeding success with native species as part of post-burn rehabilitation in arid ecosystems is competition from exotic annual brome grasses (*Bromus tectorum*, cheatgrass or *Bromus rubens*, red brome). If we could find a way to destroy the residual annual brome seed bank after fire, the probability of successful rehabilitation would be greatly increased, and even sites that have burned many times and are in persistent annual brome monocultures could perhaps be seeded successfully. The options for control of annual brome grasses in arid wildland ecosystems are limited, and each has disadvantages. One common problem of traditional control methods is that they do not control ungerminated seeds in the seed bank. *Pyrenophora semeniperda* is a weak pathogen when it infects the leaves or stems of grasses, but it shows potential to be a major pathogen of seeds. In some of the more arid sites it can have a density of killed seeds at the end of spring as high as 50,000 per square meter. We are currently studying *P. semeniperda*'s potential to become a bio-herbicide. In our studies we will explore, 1) the effectiveness of the pathogen as a bio control agent, 2) the potential risk to non-target species, 3) ways to minimize risks, and 4) a way to produce the pathogen as a bio-herbicide that can be applied across large acreage.

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