

**AFFIDAVIT OF CLIFF GARDNER**

STATE OF NEVADA     )  
                          )    ss:  
COUNTY OF ELKO     )

I, CLIFF GARDNER, being duly sworn on oath and under penalty of perjury, do hereby swear or affirm that the assertions of this affidavit are true.

1.    Affiant is over the age of eighteen years, makes this affidavit on his own personal knowledge, and is otherwise competent to testify as to the truth of the matters set forth herein.

2.    Affiant was born May 4, 1938 in Elko, Nevada, and has spent his life in Ruby Valley where he and his family now operate a cattle ranch.

3.    On August the 29th 1992 a wildfire threatened our ranch, our lives and livelihoods. The following being a summation of the events leading up to and involving that fire.

I do not believe that there has ever been a time in the history of our valley that there has been a greater danger of wildfire than there has been these last three years. During most of my life there were always enough cattle using the range to prevent runaway wildfire. But that is no longer true - now, with the agency people discouraging grazing in every way they can, we face fire danger every year from the first of July through the middle of October.

A good example of our vulnerability was the Dawley Creek fire. The year of 1992 started out to be a good year, the grass came a good deal earlier than usual. But then it turned hot and dry and the grass on the foothills just turned red, even before we had a chance to turn our cattle out. I don't think I have ever seen our meadows dryer than they were that summer. It was one of those years when you knew there was going to be a bad fire, you just don't know when. And then it happened. On August the 29th lightning struck not a half a mile above the house and away it did go.

I would estimate that it burned a quarter mile in all directions in 45 minutes. While Bertha sounded the alarm, Walt, Charley, and myself ran to the shop for our four wheel drive tractor. Before we could get to the fire it had burned half way to the County road. We could see by then that the only way we could possibly stop it was at the road, so we turned the tractor around to set up our defense there.

By then our neighbors, Steve Boyer and Chick Wolf were there. I asked Steve if he and Chick would get their horses and move our cattle off the meadows and out across the valley in case the fire should jump the road. Keep in mind that our meadow were extremely dry for that time of year. If the fire would have jumped the road it would have burned all of our meadows, all the hay we had put up, everything.

Meanwhile, my two boys and I went back to our shop for our John Deere crawler, and by using the loader on our four wheel drive tractor and the crawler, we began knocking down the brush on the upper side of the road, hoping that by doing so there would be less chance of the fire jumping the road. By then a good many of our other neighbors were there, some with the valley fire trucks, but so was the fire, it was crowding us for a quarter mile along the road and growing rapidly.

During this time there was about a forty mile an hour wind blowing with gusting occurring, and when the wind would hit right, it would pick up limbs from the burning sagebrush and carry them a hundred yards or more ahead of the fire, just starting one little fire after another ahead of itself.

Some of our neighbors started helping Bertha carry our most valuable possessions out of the house, loading them in every vehicle available. Bert Smith began moving all of our ranch tractors and other equipment onto a small area out from the barn yard that we had kept green with what little water we had left in late summer. We put lawn sprinklers on the roof of our house (which is located just below the road) so as to prevent any sparks from starting our roof on fire. Meanwhile, the people of the valley and fire crews were lining up along the road - the fire by then was more than a mile long front. It all seemed to happen at once.

If it hadn't been for the fire crews, headed by the Nevada Division of Forestry, I'm convinced we would have lost our ranch that day. Those crew leaders, most of them young men who had grown up on ranches, would, when things got hot, scatter their crews below the road to put out any spot fires as quick as they would start, and I'll tell you, I thank my lucky stars that everyone was there that day, for if they hadn't have been, we would have lost everything we owned.

Like I said earlier, it had been an extremely dry year, we had sold down on our cattle which left a good deal of extra feed on our meadows, with the intent of having it available for fall and winter use, and that feed was dry. If the fire would have gotten a start below the road we could have lost everything, our cattle, our machinery, all our fall feed, all our winter feed, our home and out buildings, everything.

I explain all this because it's important for people to understand what we are up against. The agency people have no right to be endangering our lives and operations the way they are. When a fire starts and burns out of control, it is not the bureaucrats that stand to lose everything they own, it is the people who live here. We should have the primary say in all that effects our welfare.

Soon after the fire I began quizzing the Forest officials about reclamation. I assumed that they would be seeding the burned area to crested wheat grass since that had been the standard practice for so long. But to my surprise they said no, they were not going to seed the burn to crested wheat grass, but rather were going to plant sage brush and "annual rye".

When the Forest people told me they did not plan to plant crested wheat grass on the burned areas I became quite concerned. No grass that has ever been seeded to our western rangelands, either on burned areas or otherwise, has worked as well as has crested wheat. For years crested wheat has been the standard in nearly every rehabilitation project. Once it is established it produces earlier and more abundantly than other grasses. It is drought tolerant. It's good winter feed. During April and May it is often the primary source of food for mule deer. It does not compete with bitterbrush. In fact, bitterbrush tends to come back in crested wheat seeding sooner than in other grass communities. But even more impotently, particularly in our situation, it acts as a fire retardant. Wildfire does not burn as hot over crested wheat as it does over other types of vegetation, which makes a fire easier to put out - easier to control. In addition, hot summer fires do not kill crested wheat grass as they do most species of native grass. And crested wheat holds the soil better than any other grass I have seen, which is extremely important on our steep sandy hillsides.

When I asked the Forest people why they were not planing to plant crested wheat they said there was none available. But when I talked with John Neff, our local supplier, he assured me there was plenty of crested wheat seed available. But when I went back to the Forest people with that news, they were unaffected. They only found a different excuse for not planting crested wheat. They said they planned to plant annual rye grass because it was so much better than crested wheat.

Meanwhile I had occasion to visit with Wes and Mary Parsons. The Parsons are one of the families that the Forest people put out of business at Austin. During the course of their conflict, the Parsons had experienced problems with Forest personnel planting undesirable species soon after a fire. When I mentioned to Wes that Mont Lewis wanted to plant annual rye over the Dawley Creek burn he said, "Whatever you do, don't let them plant annual rye. Annual rye is the worst thing they can possibly plant. Cattle

don't like it. It's only palatable for a short period of time in the spring. Cattle don't do well on it. And it can be poisonous under certain conditions. But worst of all, annual rye inhibits the establishment of other species." Wes then assured me that he would send a copy of all the information he had on the plant. (See Document A, the documents Wes sent)

After I had received Wes's information, I was able to convince Mont that it would be unwise to plant annual rye grass. In the meantime I had ordered enough crested wheat seed to seed the burned 2,000 acres, thinking that if I made the seed available at no cost to the government they would surly apply it to the ground. But I was wrong. They refused to use the seed that I had purchased.

I have visited with various agency officials enough to know that they are very much aware of the benefits of crested wheat grass, both for wildlife enhancement tool and as a fire retardant. The only reason I can see for their refusal to plant crested wheat is their attitude toward ranching. I am convinced that for some time now it has been the unwritten policy of most agency people to avoid any action beneficial to ranching, even when they know that such an action may be beneficial to wildlife.

Another reason that I am convinced that their primary goal is to eliminate traditional use, is the double standards that exists. As an example, for years we have been hearing about overgrazing and the erosion it causes. But what of wildfire? There can be more erosion in the first six months after a wildfire then will occur during a thousand years of heavy grazing. But do we hear the agency people talk of the erosion that occurs because of wildfire? Heck no we don't. That kind of erosion is all right because it's natural.

The Dawley Creek fire was a good example of such erosion. For weeks after the fire there was so much dirt and dust in the air at times we could hardly see the mountain. There was so much wind erosion that Fall and Winter, when spring came there were dirt drifts a foot to three feet deep in every draw between Dawley Creek and Wilson Creek.

There was so much drifting of soil that it completely filled two of our primary irrigation ditches. It was so bad that we had to hire a contractor to come in with a D6 Cat to clean out more then a mile of ditch.

The same double standard exists for riparian management. If cattle use more than 45 percent of the grass on a riparian site, according to agency personnel, its terrible, the riparian area is being destroyed. But elk can use a riparian area from early spring to late fall, or wallow in a riparian area like pigs until it's nothing but a mud hole and nothing is ever said.

Pinion/juniper encroachment is another example. The agency people will go on year after year telling the world how bad livestock are, yet nothing is ever said about the vast erosion that occurs because of pinion/juniper encroachment.

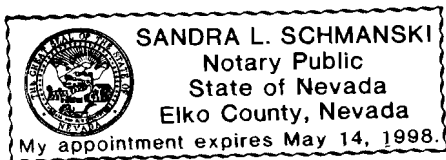
As I conclude this affidavit we continue to be plagued by these same problems. Three years have now passed since the Dawley Creek Fire. The Battle Creek Fire, which occurred this past Aug. as a result of Forest employees mismanagement (failure to allow judicious grazing use) was larger and more destructive than any fire that has occurred in Ruby Valley since the time of settlement. 11,000 acres of some of the finest mule deer range in the State was destroyed. Buildings were burned. There were people that nearly lost their lives trying to defend their homes, their livelihoods and their investments. But does this divert governmental agendas? Not at all. At this time the Nevada Division of Wildlife folks and the Forest Service folks are discouraging in every way they can, livestock grazing on the National Forest. They are making every excuse imaginable why they can not plant crested wheat grass. And they have told us they intend to plant annual rye regardless of our concerns. Their agenda remains the same. They intend to do exactly as they please regardless of the effect it may have on us, the community, or the resources. (See attached Document B, seeding recommendations made by the Ruby Valley Soil Conservation District)

FURTHER AFFIANT SAYETH NAUGHT.

Subscribed and sworn  
before me this 28<sup>th</sup>  
day of November, 1995.

  
CLIFE GARDNER

  
Notary Public



# Document A

UNIVERSITY OF CALIFORNIA  
Santa Barbara

(Allelopathic effects of Lolium multiflorum)

A Dissertation submitted in partial satisfaction  
of the requirements for the degree of

Doctor of Philosophy

in

Biology

by

Himayet Hussain Naqvi

Committee in charge:

Professor C. H. Muller, Chairman

Professor J. H. Connell

Professor J. R. Halier

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Professor W. S. Wise

7/10/42

ABSTRACT

Allelopathic effects of Lolium multiflorum

by

Himayet Hussain Naqvi

Lolium multiflorum L. (annual ryegrass) is a native of Central and Southern Europe, Northwest Africa, and temperate parts of Asia but is now naturalized in many temperate parts of the new and old world.

Annual ryegrass has certain characteristics which make it a very popular choice of agronomists and range managers. In Southern California thousands of acres of burned-over brushlands are commonly seeded with this species. The principal objectives are to provide a plant cover effective in lessening soil erosion, to supply forage for game and livestock, and to furnish competition to reduce survival of brush seedlings which may appear in great abundance following fires.

Greenhouse and field experiments have demonstrated what has been interpreted as the superior competitive ability of Lolium compared to some other species. However, subsequent investigations indicated that a strong allelopathic mechanism is also involved and that through this mechanism ryegrass releases inhibitors into the environment. Laboratory and greenhouse experiments showed

that besides toxic root exudates, water soluble toxins are also present in the above-ground parts of the plant. These toxins are capable of statistically significant inhibition of the growth and germination of seedlings in bioassays. However, it was noticed that Lolium inhibition is species specific. Some species are inhibited more and some less depending upon the susceptibility of the species involved. The amount of toxins released through leaching or decomposition of the straw determines the degree of inhibition, although certain environmental factors may influence both the amount of toxins produced and the susceptibility of associated plants. By means of paper chromatography some of these toxins have been identified as related to cinnamic and benzoic acids. Most of these phenolic acids are water soluble and capable of being leached from the plant into the environment and are probably responsible for the observed inhibition.

Laboratory studies showed these acids to be highly toxic to growth and germination of seedlings in extremely low quantities.

The phenomenon of allelopathy has a strong influence on the vegetational dynamics of natural plant communities and can be correlated with the concepts of "dominance" and "diversity" of the climax vegetation of grassland types. Use of ryegrass in agronomy and range management should be practiced only after detailed investigation of this species in relation to its associates and also in relation to the native vegetation of the area.

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Published by  
MERCK & CO., INC.  
RAHWAY, N.J., U.S.A.  
1979

THE MERCK VETERINARY MANUAL is dedicated to  
the Doctor of Veterinary Medicine and  
to his colleagues and associates  
in the animal sciences.

Subcut. hemorrhage and some edema occur proximal to the necrotic area.

Sheep given the alkaloid experimentally had ulceration in the mouth and gastroenteritis; the legs were not affected. A convulsive syndrome in sheep has been associated with the ingestion of ergot.

A syndrome of agalactia in sows, characterized by complete absence of hypertrophy of mammary glands in the preparturient period and subsequent starvation of the piglets, has followed the ingestion of ergot-infested grain. Piglets from such sows are often weak at birth.

**Control:** Control of ergotism consists of an immediate change to an ergot-free diet. Under pasture feeding conditions, frequent grazing or topping of pastures prone to ergot infection during the summer months to allow few or no flowering heads to develop should control the disease. Grain with any sign of ergot infection should not be fed to pregnant or lactating sows even if the degree of infection is low (i.e. less than 0.6% infected grain).

## PERENNIAL RYEGRASS STAGGERS

A seasonal neurotoxic condition, characterized by tremors, incoordination and sometimes collapse, affecting sheep, cattle or horses during summer and fall. It is strongly associated with short grazing of perennial ryegrass (*Lolium perenne*) dominant pastures, particularly those containing abundant dead ryegrass litter. Severe outbreaks occur in dry seasons, usually a few days after rainfall. The disease, which occurs in North America, Australia and Europe, can cause serious disruptions to animal and pasture management.

**Etiology:** The cause is unknown, but mycotoxic tremorgens such as peritrem, verruculogen, fumitremorgens and paxilline, known products of several *Penicillium* and *Aspergillus* spp., have been strongly implicated. Experimental dosage of sheep and cattle with mold cultures containing tremorgens produces a disorder closely resembling the field disease. A multiple etiology, based on a spectrum of tremorgenic molds in soil and litter, seems likely.

Sclerotia of *Claviceps purpurea*, often coincidentally present on ryegrass, do not contain neurotoxic tremorgens. Cobalt supplementation gives protection from "phalaris staggers" but not from ryegrass staggers. Clinically, ryegrass staggers is indistinguishable from "paspalum staggers" (q.v., p. 1044), a disease mainly affecting cattle and produced by tremorgens, not alkaloids, in the sclerotia of *Claviceps paspali*.

**Clinical Findings:** Signs develop gradually over a few days. In

undisturbed sheep and cattle, approached quietly, fine tremors and head nodding may be the first signs. Excessive noise and fright or sudden exercise may elicit more severe signs, such as marked tremors of head and limbs, jerky movements, marked incoordination and even collapse. Locomotion occurs in stiff bounding movements as the legs become rigidly extended. The animal may fall in lateral recumbency with opisthotonos, nystagmus, stiffly extended limbs and fasciculation of muscle groups. The attack quickly subsides, the animal sits with a dazed appearance and within minutes will regain its feet and rejoin the flock or herd. If again forced to run the episode will be repeated. Both cattle and sheep avoid rapid movements and stand and graze with hind legs abducted to maintain balance. Horses often walk with a reeling gait.

Generally, animals recover completely when pasture toxicity falls or when given alternative feed. Within flocks and herds individual susceptibility varies greatly; some are affected in most summers yet others are never affected. Morbidity may reach 80% but mortality is low and death is usually accidental. No constant gross or microscopic lesions are found at necropsy. The muscle dystrophy and cerebellar Purkinje-cell degeneration observed in some cases are regarded as lesions secondary to the incoordination and convulsive episodes.

**Control:** Since movement and handling of animals exacerbates signs, individual treatment is generally impractical. Recovery is spontaneous if animals are allowed to migrate (not driven) onto nontoxic pastures or crops. Injections of diazepam or mephensin may reduce severe muscular spasms.

High stocking rates and overgrazing of ryegrass dominant pastures should be avoided during the dangerous season. Experimentally, good seasonal control has been achieved by prior injections of compounds known to stimulate liver mixed-function oxidase enzymes, which inactivate the tremorgens. Carcass residues preclude the use of these compounds but alternative stimulants may prove acceptable.

## ANNUAL RYEGRASS STAGGERS

This disease occurs in Australia in sheep and cattle grazing annual (Wimmera) ryegrass (*Lolium rigidum*) pastures.

**Etiology:** The neurotoxicity is associated with seedhead galls which result from a primary infestation by a nematode (*Anguina lolii*) and subsequent infection of the gall with a bacterium (*Corynebacterium* sp.). The bacterial galls are toxic but not the nematode galls. A similar disease has been reported from Oregon when hay of *Festuca*

*rubra* var. *commutata* (Chewing's fescue) with *Corynebacterium*-infected seedhead galls proved toxic to cattle and horses.

**Clinical Findings:** Signs are closely similar to those of perennial ryegrass staggers (q.v., p. 1046). However mortality in animals affected with annual ryegrass staggers is often 40 to 50%.

**Control:** No treatment is known. Topping of overgrown pastures and grazing management aimed at restricting seed formation is recommended.

### Senecio POISONING

(Pyrrolizidine alkaloidosis, Seneciosis, Ragwort, Ragweed poisoning)

A chronic and infrequently acute poisoning caused by many toxic plants found most commonly in the genera *Senecio*, *Crotalaria* and *Heliotropium* but also in *Amsinckia*, *Echium*, *Cynoglossum* and *Trichodesma*. These plants grow mainly in temperate climates, but some (e.g. *Crotalaria*) require tropical or subtropical climates. Their distribution is worldwide and it is likely that their toxic effects are unique. The plants most commonly responsible are ragwort (*S. jacobaea*), woolly groundsel (*S. ridellii*, *S. longilobus*) and seeds of yellow tarweed (*A. intermedia*).

The toxic factors common to these plants are a number of pyrrolizidine alkaloids that affect mainly the liver. Cattle, horses and swine are the species most susceptible to intoxication. Sheep are much less susceptible. It is claimed that in sheep rumen liquor the alkaloids are reduced to the corresponding (nontoxic) 1-methylene pyrrolizidine derivatives. The organism responsible for this reduction has been isolated and characterized as a new species, *Peptococcus heliotrinreductans*. However, an alternative explanation advanced is that the marked species difference is due to differences in hepatic alkaloid metabolism rather than to rumen effects. Individual susceptibility varies greatly within species and may be influenced by sex, age and diet. Young growing animals are most susceptible because the alkaloids have a marked antimitotic effect on liver cells.

Under normal conditions these plants are unpalatable and are avoided by grazing animals. During drought conditions the growing plants may be eaten. Animals are also poisoned by eating the plant material in hay or silage. Seeds from *Crotalaria*, *Amsinckia* and *Heliotropium*, which have been harvested with grain, have been responsible for the disease in horses, cattle, swine and poultry.

**Clinical Findings:** The clinical signs and the pathologic effects are

similar in all animal species affected regardless of the species of plant responsible or the toxic pyrrolizidine alkaloids it contains. The acute form of the disease, characterized by sudden death from acute hemorrhagic liver necrosis and visceral hemorrhages, is rare. The effects upon the liver of repeated low intake of toxic plants are cumulative and progressive; clinical signs may not be seen for several weeks (often after consumption of the plant has ceased). In *Heliotropium* spp. poisoning severe losses are produced in sheep only after the plants have been grazed for a second season.

In horses and cattle, some of the following signs are seen: loss of condition, anorexia, dullness and constipation or diarrhea. Tenesmus and passing of bloodstained feces may be followed by rectal prolapse, especially in cattle. Ascites and icterus may be present and cattle sometimes show intermittent photosensitization. Some animals may become progressively weaker and rarely move while others wander aimlessly with an awkward gait, either stumbling against or actively pushing headlong into fences or other structures. Still others may become frenzied and dangerously aggressive. Pica may be observed in some individuals. Death may occur suddenly or following prolonged recumbency with hepatic coma and high blood-ammonia levels.

**Lesions:** In acute cases the liver may be enlarged, hemorrhagic and icteric. In chronic cases the liver is atrophied, fibrous, misshapen, and usually pale with a glistening surface due to fibrous thickening of the capsule. Other livers are markedly icteric. The gallbladder is often edematous and grossly distended with thick mucoid bile. Edema of segments of the bowel, mesentery and associated lymph nodes is common and much ascitic fluid may be found in the abdominal cavity. In some cases numerous small hemorrhages are present in the abdominal serous membranes.

Characteristic histologic changes are found in the liver. Irreversible enlargement of individual hepatocytes (megalocytosis) is unique, and is conspicuous in the horse and sheep, but less pronounced in cattle. In cattle, marked perivenous fibrosis of sublobular veins is usually present, but this is not a consistent finding in the horse and sheep. In all species there are marked increases in connective tissue both within and around the lobules.

**Diagnosis and Treatment:** A diagnosis based on a history of the outbreak, clinical signs and gross necropsy findings can usually be confirmed by histologic examination of liver tissue obtained by biopsy or at necropsy.

Further intake of toxic plant material must be prevented. Animals showing clinical signs rarely recover and lesions present in asymptomatic animals may progress and result in further losses over several months. Since high-protein intake may prove harmful, diets with a high-carbohydrate ratio are indicated. Intravenous adminis-