



Livestock, Range & Watershed

Division of Agriculture & Natural Resources

Counties of San Luis Obispo and Monterey

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Obtaining water for livestock in remote areas may be difficult, especially without electricity. There is an ANR publication available through our office that may provide some help. This publication is “Using Solar and Wind Energy to Pump Water For Livestock in Remote Areas” written by Ralph Phillips and James Sullins. Please contact us if you would like a copy.

Announcements

- **Newsletter Subscription**

If you know of any one that would like to receive this newsletter please have them contact Darryn Robison at (805) 781-5942.

- **Firewise Community Workshop**

Firewise communities and the San Luis Obispo County Community Fire Safe Council are sponsoring a national workshop at the Embassy Suites in San Luis Obispo, December 2-3. Participants will learn firewise land use planning, mitigation measures, home construction and landscaping, collaboration, and planning. **Please see flyer insert for details.**

PREPARING FOR WEST NILE VIRUS IN SAN LUIS OBISPO COUNTY

Brenda Ouwerkerk

The following is a summary of West Nile Virus update received from Greg Thomas, M.D., County Health Officer.

San Luis Obispo – “San Luis Obispo County West Nile Virus Task Force is asking the citizens of San Luis Obispo County to assist in its surveillance efforts,” says Barbara Schwenoha, Communicable Disease Nurse. Now that the virus has been found in California, it is more important than ever to report dead birds to the California Department of Health Services West Nile Virus toll-free hotline. The Task Force is also looking for locations throughout the County where mosquito traps can be used to capture mosquitoes to determine if they are carrying the virus.

Residents who find freshly dead crows, blue jays, raptors such as owls, hawks or eagles are encouraged to contact the California Department of Health Services West Nile Virus toll-free hotline at 1-877-WNV-BIRD (1-877-968-2473) or log onto www.westnile.ca.gov. To volunteer to allow the County to use mosquito traps on your property, please call Kim Catherina at 781-5757.

Typically, West Nile Virus appears in a community's bird and horse population before it appears in human beings. West Nile virus has not been reported in San Luis Obispo County. The first evidence of West Nile virus (WNV) in California this year was found in mosquitoes collected in Imperial County near the Salton Sea, State Health Director Diana M. Bontá, R.N., Dr.P.H., has announced. Several flocks of sentinel chickens from the same region are also positive for WNV. The testing of mosquitoes and sentinel chickens are part of the state's surveillance system for WNV and other mosquito-borne viruses. The blood tests indicate the chickens that are kept in flocks outdoors, were bitten by mosquitoes infected with WNV or a closely related virus. Recently, West Nile Virus was identified in a dead crow in Los Angeles County.

The best way to avoid the disease is to reduce exposure to and eliminate breeding sources for mosquitoes.

San Luis Obispo County citizens should be aware of West Nile virus and take some simple steps to protect themselves against mosquito bites by avoiding being outside during mosquito-prone times (dawn, dusk, and early evening), wearing long sleeves and long pants when outdoors especially at night, and using a repellent containing DEET on exposed skin. Follow the label directions when using any repellent.

Be sure to look around your home, property and neighborhood and empty any standing

maggies, ravens, sparrows, finches, cardinals and water from containers such as flowerpots, tires, and gutters. Regularly change animal water

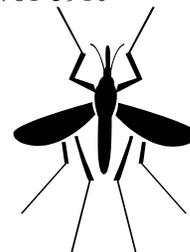
bowls and troughs to prevent mosquito breeding. Plant mosquito-eating fish in ponds, fountains, birdbaths and other standing water around your home. Screens on porches and windows will keep mosquitoes from getting into your home, and therefore should be well maintained.

West Nile Virus is spread to birds, animals and humans by mosquitoes. There is no evidence that the virus can be transmitted from birds to humans and is not spread from person to person by casual contact. Although rarely spread from person to person via blood transfusions or organ transplantation, new blood bank procedures are now screening for WNV.

General information can also be found at the San Luis Obispo County Department of Public Health website: www.slopublichealth.org under "Hot Issues". For more information about San Luis Obispo County's preparedness efforts, you may also contact the Public Health Department/Environmental Health Services at 781-5544.

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Managing Young Cows Reproductive Performance

Wayne Jensen

The following is a brief synopsis of a talk given by reproductive physiologist Tom Geary, USDA-ARS Fort Keogh, Miles City, MT, at the recent Beef Improvement Federation meeting in Lexington, KY. It may not be possible to utilize all the recommendations mentioned but it should give you some ideas to consider in your breeding program.

It's long been recognized that reproduction is the main limiting factor relative to production efficiency. But, there's serious doubt about whether or not the industry has made much progress in improving reproductive efficiency.

The most common reproductive problem that producers encounter is getting first-calf heifers rebred. This is particularly important because it's estimated the average replacement female has \$950 invested in her through the time of first calving. Producers simply can't afford to lose a female at this stage of her reproductive life.

The following are some tactics to improve the reproductive performance of young cows via additional inputs, management alternatives and selection to reduce nutrient requirements of cows:

- Match the cows to the environment. The genetic potential of the female must be in synch with the production environment. It's essentially impossible to avoid a negative energy balance in young cows.
- Manage the young cows appropriately. Calving heifers prior to the start of calving season to allow for the longer postpartum interval of young cows is a good practice. That's if heifers are fed

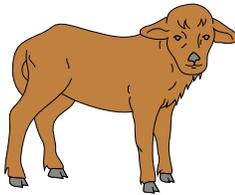
sufficiently prior to calving, and before green grass is available, or the earlier calving date can actually increase the problem.

- Develop heifers to 65% of mature weight at breeding. The old rule of 650-700 lbs. is correct if a producer has 1,000- to 1,100-lb. mature cows. However, in today's herds, mature weights are often 1,250 lbs. or more, which means heifers should be weighing 800 lbs. at the onset of estrus.
- Synchronize heifers to conceive early during a short breeding season. This is a benefit whether bull breeding or using AI.
- Artificially inseminate heifers with semen from calving ease proven sires.
- Provide additional energy during the last 50 days of gestation so that heifers calve at a minimum body condition score (BCS) of 5. (Recent research suggests that a BCS 6 may be the ideal target for younger cows, both from a rebreeding and calf health standpoint as it relates to transfer of immunity.)
- Provide early calving assistance when intervention is needed. After a heifer has spent 1.5 hours in stage 2 labor (hooves visible), every 30-minute delay in providing assistance, results in an additional six days to her interval to pregnancy.
- Provide young cows with the best feed resources available after calving.
- Provide ionophores* to cows after calving to improve utilization of feed. A summary of five different studies showed that feeding ionophores after calving increases feed costs less than 2¢/day, but shortens postpartum interval

in cows by an average of 18 days provided adequate energy is available.

- Expose young cows to sterile bulls or androgenized cows during the last 30 days before the start of breeding season.
- Induce/synchronize estrus cycles in young cows even with natural service.
- Consider early weaning during drought and cheap feed availability. Early and permanent weaning holds more promise for improving reproductive efficiency in first-calf heifers than probably all other methods combined. (Studies show that calves weaned as early as 40 days can have comparable rates of suckled calves).

* Ionophores are compounds included in diets of growing and finishing cattle to improve feed efficiency and animal health.



Range Seeding Can Yield Long-Term Benefits

Paul Lyon

The information in this article is summarized from the Range Management Fact Sheet “Planting and Managing Range Legumes and Grasses in San Luis Obispo County” by Bill Weitkamp. For the full fact sheet and other information please contact our office.

The seeding of rangeland with annual legumes and perennial grasses may seem expensive, but a successful seeding, when properly grazed, can last a long time. The increased forage yield and protein content during the long life of a

range seeding should make it a wise investment. These plants will provide good vegetative cover and reduce soil erosion. Also this practice may qualify for cost sharing through the federal Agricultural Conservation Program. As with any dry land agriculture, however, variable factors such as weather, soil, insects and management cause results to vary. If the weather is very dry the first year, seedling establishment may be disappointing or even a failure. Usually, however, some establishment will be made the first year and the stand will improve in the following years.

Annual legumes, such as medics and rose and subterranean clovers add nitrogen directly to the soil. This process of nitrogen fixation takes place right on the root nodule. These legumes also increase the forage protein content. Some varieties are adapted to areas which receive as little as 8 inches of annual rainfall while others require 15 to 20 inches. Legume seeds should be inoculated with the proper nitrogen –fixing bacteria for the species just before planting. A do-it-yourself inoculation method is a system called Pelinoc-Pelgel. It is easy to apply, inexpensive, and very effective. Seed can also be purchased that has already been inoculated. Perennial grasses extend the green season and increase forage production on ranges with 15 or more inches of annual rainfall. They are especially beneficial during dry years because they are perennial plants with long roots that extract deep soil moisture. Some perennials become clumpy and unpalatable if not grazed enough while in a young stage of growth. Since annual legumes and perennial grasses thrive under similar management, they complement each other well in a range seeding.

Range seedings should be made before November 1 in order to catch the early rains and allow for germination before cold weather begins and competing resident plants begin to grow. Applications for cost sharing from the Agricultural Conservation Program must be

approved before work begins in order to qualify for payment. Since plant species and varieties vary in season of maturity and their adaptability to different sites, it is advisable to initially seed a broad mixture of species. In later years, it may be more economical and effective to select fewer varieties based on previous results and/or use different mixtures on different sites.

An ideal seedbed is a stubble field that has been farmed to oat hay or cereal grain using good weed control practices. Legumes and grasses may be sown directly into the stubble with a range or grain drill or a Brillion seeder. Seeding in the ash of recent burns or on fuel breaks made with bulldozers or disks can be effective too. Herbicide application may be needed the following spring, after the legume seeds have matured, to reduce brush regrowth. For broadcast seedings on tilled, loose soil, seed loss to birds and rodents is reduced and germination is more successful if the seed is covered with about ¼ inch of soil by using a ring roller. Seed should not be buried deeper than ½ inch or germinating plants may be unable to reach the soil surface. Seedings can also be made in established grassland using only a range or grain drill. The low-growing legumes, such as sub clover, respond well to this method if livestock grazing is used to reduce competition from other plants.

More information on range seeding projects can be obtained for your particular situation by contacting UC Cooperative Extension – Paso Robles (805) 237-3100.



Perennial Grass Seeding Risks

Royce Larsen

Establishment of perennial grasses on California Annual Grasslands can yield long-term benefits. However, caution should be used when considering reseeding projects. A perennial grass seeding trial was conducted in South Eastern Monterey County from 1999 – 2003. We tested species selection and grazing management in a seeding trial for evaluating the ease of establishment of 6 perennial grass species. Establishment of perennial grasses can be difficult depending on environmental and management factors such as climate, rainfall timing and amount, insects, weed control, species adaptation and grazing. Most of the areas in San Luis Obispo and Monterey Counties have climate, including the amount and timing of rainfall and temperature that favors annual grasses. Without irrigation and weed control perennial grass establishment is difficult at best. Therefore these factors should be considered before seeding perennial grasses.

In our trial we tested Perla grass (*Phalaris tuberosa* var. *hirtiglumis*), holdfast harding grass (*Phalaris tuberosa* var. *stenoptera*), paiute orchard grass (*Dactylis glomerata*), blue wild-rye (*Elymus glaucus*), slender wheatgrass (*Agropyron trachycaulum*), and sheep fescue (*Festuca ovina*), using 4 different mixes. These were planted in a 12-acre field that had been dry land farmed for many years. The field was divided into 12 - one acre plots. Each mix was randomly replicated three times within this field. The first mix consisted of harding grass (33%), perla grass (33%) and orchard grass (33%). The second mix consisted of perla grass (48%), slender wheatgrass (26%) and sheep fescue (26%). The third mix consisted of orchard grass (50%), harding grass (25%) and perla grass (25%). The fourth mix consisted of blue wild-rye (50%) and orchard grass (50%).

These were planted in a old dryland field in December 1999.

Grazing was used as a means to control competition from annual grasses and forbs. Grazing was tested using light grazing, moderate grazing, and no grazing during the growing season. Stand establishment, vigor and seed production was evaluated for 4 growing seasons. Seedling density was measured for three growing seasons. At the end of the second growing season there were an average 1.6 plants per square foot and orchard grass was the most common species. This would have been a good establishment of perennial grasses had this density maintained itself. However, at the end of 4 growing seasons, there were less than an average 0.1 plants per square foot, and *Phalaris* species were the most common species. There appeared to be no significant differences in grazing treatments. Overall establishment of perennial grasses for this seeding trial was very poor.

There was below normal precipitation during the last three years. Annual grasses and forbs competed rigorously with the perennial grasses. There was a severe grasshopper infestation on the study site during one of the years. The grasshoppers seemed to concentrate on the green foliage of the perennial grasses long after the annuals had dried. Low precipitation, grasshopper infestation, annual grass and forbs competition and grazing management may have contributed to these results. There have been successful perennial grass seedings in both San Luis Obispo and Monterey counties. But there is a risk involved getting perennial grass seedings established.



Perennial grass establishment can be successful and may benefit livestock production and soil erosion protection. However, most of our rangelands consist of annual grasses and forbs. Proper management of annual rangelands can improve forage productivity as well provide a high degree of protection from soil erosion and nutrient losses. A new publication by Bartolome et. al., “California Guidelines for Residual Dry Matter (RDM) Management on Coastal and Foothill Annual Rangelands” (publication 8092), discusses the benefits of proper management of annual grasslands. Research has shown that RDM has a significant influence on range production and species richness. Maximum productivity and species richness was found when there was between 600 to 1,200 lb/acre RDM in the fall. If you would like more information or a copy of this publication please contact our office.

Preventing Erosion During Winter Storms *Royce Larsen*

Winter is still three months away, but now is the time to prepare for erosion prevention. Non-point Source Pollution (NPS) has been a major focus of regulatory agencies for the last decade.

If water fails to infiltrate into the soil, it flows over the surface. As water concentrates on the surface it increases in mass (coalescing into larger volumes) and velocity as it moves towards a stream. With every incremental increase in mass and velocity there is almost a

doubling of the energy (kinetic energy) associated with the runoff. Kinetic energy is equal to $\frac{1}{2}$ mass * velocity², hence for every foot per second increase in velocity, kinetic energy is almost squared. Any activity that increases water velocity increases the kinetic energy, which then activates erosional processes.

Erosion is defined as the detachment, transportation, and deposition of soil particles. Vegetative cover protects against splash and sheet erosion by absorbing the energy associated with raindrops. Vegetative cover also slows surface flow, which increases infiltration. As the previous years vegetation breaks down it adds organic matter to the soil improving aggregate stability and decreases bulk density, which ultimately increases infiltration. Any activity that removes too much vegetation such as tillage, grading, road building, over grazing or fire, will open the soil surface to increased sheet and rill erosion. Other physical properties such as soil texture, aggregate stability, bulk density, topography, type of land use and type of vegetation also has an important role in infiltration.

Leaving proper amounts of vegetative cover, residual dry matter (RDM), will decrease surface runoff and erosion. The least amount of cover needed for this protection is 700 - 1,000



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lbs/ac of RDM depending on soil type and slope.

Other compacted bare surfaces, i.e. roads, have been identified by regulatory agencies as a major source of erosion. Management activities like properly sloped and drained roads and trails will help decrease the accelerated erosion. Maintain and clean ditches if blocked. Eliminate outside berms, restore and resurface as necessary and minimize use. Dirt roads can be planted to grass and other low growing plants during the rainy season. Mulching is another means protecting against raindrop impact and slowing surface flow rates on road surfaces.

Proper size and installation of culverts is also necessary to help decrease erosion. Check and make sure culverts are not plugged. Bent or damaged culvert ends should be straightened and reopened. Outlets where erosion is occurring can be armored or fitted with downspouts. Overflow problems may need larger culverts or a second overflow pipe. Proper maintenance of bridges and fords (rocking, scraping, riprap) is also important. Always check to make sure proper permits are obtained if needed. Technical help and information with the best management practices is available from your local NRCS office, RCD, Farm Bureau, and UC Cooperative Extension offices.



Wayne Jensen
Livestock & Natural Resources Farm Advisor
San Luis Obispo and Santa Barbara Counties

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Livestock, Range, and Watershed



Pulling together when the chips are down