



Hugh Hammond Bennett (right), first Chief of the Soil Conservation Service.

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Dairies Reap Benefit of Critical Planning

Despite challenges and tight schedules, NRCS New Mexico was able to allocate funds for all viable animal feeding operation (AFOs) projects this year under the Environmental Quality Incentives Program (EQIP). In New Mexico, these operations are primarily dairies. This amounted to 11 projects for a total of \$1.1 million.

“A lot of credit goes to folks who have vision,” said Norman Vigil, assistant state conservationist for programs. “Due to previous planning we were able to set aside enough money to meet the needs.”

The groundwork for this 2006 success was laid when NRCS began to gear up for the program several years back and anticipated a large demand. It was the responsibility of NRCS New Mexico staff to interpret the rules and regulations, and outline a course of action.

There were initial challenges to overcome, and critical analysis required to match resources with workload. All of this was done

while time constraints were important and involved in court action on rules.

“We are still working on balancing resources and demand,” said Vigil. “We cannot be over-confident because there is the potential for great need – and we certainly want to provide for that need and prepare ourselves to do so.”

In response to the needs Vigil notes, NRCS is still evaluating and analyzing its process.

“We are learning and evolving as we go on,” said Vigil.

Clearly, the staff working in this area has done a great job launching the program. We look forward to their continued efforts.

For information about AFO/CAFO assistance under the EQIP program contact the NRCS office nearest you.



State Conservationist: Speaking on Achievements and Changes

The commitment to New Mexico farmers, ranchers, and other conservationists is demonstrated by NRCS in many ways – not the least of which are the benefits realized through the Farm Bill. This year alone, NRCS New Mexico allocated \$19 million in financial assistance through Farm Bill programs. Allocation under the Environmental Quality Incentives Program was \$18.2 million with \$1.1 million of that going to AFO/CAFOs, \$1.5 million to federal lands collaborative grazing projects, \$1.7 to tribal lands, and \$225,000 through conservation innovation grants. Funding under the Wildlife Habitat Incentive Program was \$340,570, Wetlands Reserve Program \$131,000, and Farm and Ranch Lands Protection Program \$291,000.

In an effort to continually improve this funding process, this coming year NRCS New Mexico will be accelerating program cut off dates to allow producers time to complete

practices during the first years of their contract. We anticipate the end of the application period will be moved to the end of November/first of December – and that contracts will be signed by mid-March.

This will, also, help accommodate field work to be done in the fall and before winter weather sets in. And, it will allow producers to get to their contract work in the spring rather than later on in the summer in the middle of the growing season.

This makes coming in early to meet with NRCS staff more important than ever. I would personally encourage you to come in and visit with our staff now. We know that producers that get in early and have a conservation plan, generally have a better chance of getting funded.

As the new New Mexico state conservationist I appreciate the opportunity to work with you as we move forward in the many ways NRCS serves farmers, ranchers, and



Dennis Alexander
State Conservationist

the public. It is an honor to assume this position as state conservationist for New Mexico. I am struck by the loyalty of the New Mexico staff, and look forward to leading their efforts to achieve and maintain excellence in their service to you.

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Lovin' Your Ranchette Urged

The notion of a place in the country away from the hustle and bustle of the city, where the kids can grow up enjoying a clean, rural lifestyle is an admirable goal. But what happens when rural residents realize their ranchette is too big to mow and too small to plow? NRCS New Mexico is creating a new series of conservation booklets which show that caring about the land can come in small packages as well as wide open spaces.

“Those who care about the environment have been concerned about maintaining quality agricultural land for decades,” said Dennis Alexander, USDA Natural Resources Conservation Services (NRCS) state conservationist. “We believe there is a need to bring conservation to the small acreage landowners and assist the truck farm or horse pasture they dreamed of when they moved to the country – and in the process preserve and even enhance the environmental quality in many of our rural areas in New Mexico.”

Recently, the first issue of the “Lovin’ Your Ranchette” series, *Small Acreage Grazing*, was released. The series by NRCS is designed to educate owners of small, rural properties about the conservation choices and productivity options through conservation planning that may be available to them on their small



acreage. Throughout the release of this series, NRCS is offering information online and at NRCS offices about conservation planning and land management practices that can work on that small ranchette, orchard, herb farm, or other similar enterprise.

“Small acreages have the same conservation needs as larger rural properties. This ‘how-to’ publication provides conservation tips to these rural residents,” Alexander said. “There is water and wind erosion to be prevented, watersheds to be protected, and the vision of those private landowners to be realized. Soil and water conservation districts, NRCS, and many other partnering

organizations and agencies can give these landowners a fresh look, and help them make sound land management decisions that benefit their family, community, environment, and bottom line.”

The Natural Resources Conservation Service is asking that you share this information with rural residents that are small acreage landowners and could benefit from some ‘how to’ guidance.

Anyone interested in the Small Acreage Grazing issue of the “Lovin’ Your Ranchette” series can access this document at www.nm.nrcs.usda.gov

Area Conservationist: Drought Does Not Have To Win

Dry weather is a common and repetitive fact of life in the Southwest - and especially in New Mexico. Right now we are in a drought that is describe as 'severe' with record low snowfall and rainfall amounts. But drought does not always have to win. There is a relatively new irrigation technology that is a blessing to the farmer called subsurface drip irrigation.

"On our old farm we can water a mature pecan orchard within the allowable three acre-feet of irrigation water we get, and apply fertilizer efficiently using our old first-generation surface drip system," said Rick Holdridge, pecan producer and Deming Soil and Water Conservation District Board member. "On our new orchard, by designing the system to grow with the young trees, we have been able to irrigate with about 12 inches of water and the trees are flourishing."

Subsurface drip irrigation is similar to conventional above ground drip or trickle irrigation systems. Both are comprised of pumps and booster pumps that force irrigation water through a series of sand filters into a main line, and then to sub-mains that direct the filtered water into fields. The subsurface drip irrigation system uses buried

drip tape with evenly spaced emitters.

The spacing of the drip lines for row crops can vary but are usually on 38 or 40 inch centers, buried at an 8 to 10 inch depth. Emitters are commonly 12 inches apart. The lines are drip tape composed of flexible plastic polyethylene of varying sizes depending on amount of water needed to be applied in the proper time for that soil and crop. Long lasting drip tape lines are those that are thicker, with more mils of thickness.

Most systems use wells but many also use ditch systems. Subsurface drip irrigation can be used for most types of crops and orchards including row crops, pecans, pastures, and alfalfa.

In New Mexico the majority of the buried drip systems are located in Luna County, with some in Doña Ana and Sierra Counties. NRCS estimates the Environmental Quality Incentive Program (EQIP) has cost shared 4 million dollars for these systems.

"We expect the new system to use about half (the water) of what our old first generation does when the trees are mature," Holdridge said. "Labor on the new system

by Cliff Sanchez

is expected to be about a third of what my old system requires."

Crop Results

Certain crops, such as onions, are planted on a narrow bed - traditionally with two rows. With drip tape, a third row can be planted in the center of the bed. Farmers in southern New Mexico have experienced crop harvests that are triple in pounds per acre. Quality has increased Again with onions, most are being graded as Jumbos or Grade 1's and very few, if any, Grade 2's. On certain other crops such as tomatoes or chile, the yields have doubled.

Testing demonstrations are ongoing with wider beds using two or three lines. Frequency and duration of irrigation times are also being varied. The purpose of these demonstrations is to maximize yields and quality. For pasture and haylands the tapes are placed a little closer together. The stands take longer to establish, but then flourish.

Water Savings

Generally the numbers being reported show that crop results are occurring using much less



irrigation water. The efficiency of a subsurface irrigation system can approach 95 percent. Some furrow systems by comparison can have efficiencies as low as 40 percent. To meet crop requirements it is therefore possible to use as little as 46 percent of the water you would use in a furrow system.

Costs

Installation costs are averaging \$2000 per acre for entire systems. Most system sizes are 80 to 100+ acres. On projects where there are EQIP cost shares, copayment by the farmers has run as low as 50 percent. In some locations maximum contract amount per practice such as drip has been instituted. In Luna county the maximum is \$99,900 per practice.

Operation and Maintenance

Operation and maintenance of these expensive systems is critical. Fertilizers that prevent precipitates from forming such as calcium, phosphates, and bicarbonates can easily plug the emitters. Injection of sulfuric acid or acid based fertilizers is used to maintain a water pH of 6.5 or lower in many cases to prevent minerals from

precipitating and clogging emitters. Fertilizers are usually all injected through the subsurface drip irrigation system. This is called fertigation.

Root intrusion is prevented by injecting chlorine or approved herbicides at appropriate times, then running fresh water afterward. Emitter plugging that is caused by materials passing through the filter system is prevented by flushing at regular intervals. Soil ingestion is prevented by installing air vacuum relief valves. Finally, gophers are drip irrigation systems number one enemy.

And there is much more. The Deming Soil and Water Conservation District recently hosted a workshop on buried drip that was well attended by about 62 producers and much was learned. They are to be commended for this initiative.

These buried drip systems are complex and everyone is learning more about them as time goes on. But for true water conservation – they are a way we can live with drought and still win.

Entrepreneur Eyes PMC Products

Autumn Amber and Giant Sacaton Find Market Niche

David Salman, president of Santa Fe Greenhouses, Inc. and *High Country Gardens* catalog, had heard about the Los Lunas Plant Materials Center from a well-known Santa Fe landscape designer but may not have expected what he saw when he visited in 2003.

“I was very impressed with the Plant Materials Center,” said Salman. “I had received an invitation to the PMC Field Day that year, but couldn’t make. I did go a few weeks later.”

Salman immediately spotted two cultivars that stood out as ones he could use for ornamental horticulture applications. He has worked to incorporate them into his business since then.

Autumn Amber Three Leaf Sumac was noticed by Salman as an excellent alternative to spreading juniper. While not an evergreen it has an amazing abundance of chartreuse colored flowers in mid-spring and attractive glossy green foliage that turns an amber-yellow in the fall.

Autumn Amber and Salman’s operations are a good fit, because Salman is always looking for native plants that are drought tolerant. This is also a good fit with the

PMC because they are working to develop plants that conserve water and respond to New Mexico’s challenging climate.

The second plant that caught Salman’s eye was the Giant Sacaton Grass. Giant Sacaton was originally developed by the Plant Material Center for non-woody windbreaks in area vegetable fields. Breeding by the PMC has made a dramatic difference – resulting in a large grass that surpasses Pampas grass in stature and is much bigger and showier than its unimproved native forms.

“We need to use more natives in our landscaping, and Giant Sacaton is native,” said Salman. “It can serve as a specimen plant, or used in a row to create a living fence or windbreak.”

While the Plant Materials Center is striving to meet many conservation needs, pioneers like Salman are finding that some of the products do an outstanding job in the backyard as well as in the field. Private individuals like Salman deserve our gratitude for aiding conservation of our resources and environment through the development, use, and sale of such cultivars.



Common Soil Can Raise Havoc

Awareness and Recognition Important to Loss Prevention

Have you wondered while traveling between Albuquerque and Santa Fe why the road suddenly becomes bumpy and wavy near Algodones? Have you noticed the same thing on stretches between Espanola and Taos? Ken Scheffe, NRCS state soil scientist explains the reason in a paper he presented to the Geological Society of America earlier this fiscal year. The culprit is collapsible soil.

Collapsible soils are common throughout the Rio Grande Valley in central New Mexico. Significant losses have occurred for those who unknowingly build on collapsible soils as well as significant cost increases have been incurred by those who are aware of the hazard and take remedial measures to develop the site.

Formation of Collapsible Soils

New Mexico is undergoing dramatic urban development and expansion of its cities and communities beyond the Rio Grande Valley terraces and flood plain onto the alluvial fans from the mountains. The alluvial fans upon which urban development is occurring also happens to be the environment of collapsible soils.

The arid climate seldom wets the surface soils to a depth of

a more than a few centimeters. Intense very brief thunderstorms occurring during the summer monsoon season are greatly intensified by the uplift of mountain ranges. Resultant flash floods carry large sediment loads from the sparsely vegetated mountain foothills onto the alluvial fans. The highly porous structure of the mudflow or debris flow remains intact and is often further buried. Calcium carbonate in the soil provides cohesion of the clay and silt minerals to sand grains giving considerable strength to the soil when dry.

Creation of the Collapse

The collapse of these soils is induced when water is introduced and reduces the soil strength. This water is introduced during urban development when arroyos are intercepted by flood control structures or canals to protect homes. Roads and home sites are graded into the landscapes exposing cuts up to several meters in depth. Irrigation systems are installed to support landscaping. Wells and septic systems are utilized if the reach of municipal water and sewage services is exceeded.

Water entering the soil through irrigation and waste disposal exceeds that realized during the

formation of the native landforms and soils several fold. Rainfall runoff which seldom occurred before development is concentrated by impermeable surfaces such as roofs, driveways, and streets and drains into landscaping, roadside ditches and low spots permeating several tens of meters in the coarse textured soils.

Then when collapse occurs it is transferred to the soil surface with devastating effect upon structures. Up to one meter or more collapse has been observed.

Scheffe's message in his paper was that creation of awareness and recognition of the expression of the hazard and remediation measures are important in preventing future losses.



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