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## Forage Testing Provides Valuable Information to Arizona Producers with Cattle Grazing Native Rangelands

Arizona cow-calf producers face significant challenges related to grazing on native rangelands. With increased climate variability and severe droughts occurring more frequently, forage quality is of particular concern. Deficiencies in minerals can be severe enough to cause clinical disease (e.g. white muscle disease due to lack of selenium), however subclinical deficiencies can adversely affect production factors including cow fertility, calf health, and weaning weights. Many producers believe a mineral program is simply supplying a trace mineral “red block”, however these blocks are typically inadequate in several important minerals that are deficient on Arizona rangelands. Previous forage testing in central Arizona demonstrated a number of mineral deficiencies, in particular phosphorous, zinc, copper, and most importantly selenium (30 – 50% deficient). While the underlying geology and soils plays a role in the mineral content of plants, several other factors affect mineral levels including rainfall, plant species, and season. Due to soil and vegetation variations, a focus group determined that forage testing in southeastern Arizona would be of benefit to ranchers in the area. Two agents from the University of Arizona, in collaboration with the Natural Resource Conservation Service, identified seven unique ecological sites in Greenlee County. Seasonal rain gauges were established, and forage samples representing key grazing species were collected two to four times per year for mineral content analysis. Similar to central Arizona, forages across all sampling sites were deficient in Phosphorous (80% deficient), Copper (30-60% deficient), and Zinc (35-75% deficient), however southeastern Arizona faced much more significant deficiencies in Selenium (100% deficient). Additionally, some of the forages sampled had extremely high levels of iron (8 – 18x needed levels), which can act as an antagonist to other minerals. These preliminary results have been presented to ranchers across the region and state, resulting in alterations of several mineral programs. Due to high demand, an expansion of the testing area is underway. While supplementation is not an exact science, forage testing is an excellent tool to identify potential holes in a supplement program, provide cattle with the resources they need, and help Arizona’s ranchers remain profitable and sustainable.