

Crabgrass Pasture Produces Good Calf Gains

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When crabgrass pasture is mentioned around a group of producers, some cuss it and the guy who mentioned it, some snicker, others just guffaw, but almost invariably some kind soul will sneak by later and testify about using the forage to an advantage. It is a forage that can be excellent pasture or hay if managed for such and not as a weed.

Crabgrass, scientifically labeled *Digitaria sanguinalis*, has been used for pasture, hay, and a seed crop for many years on Noble Foundation demonstration and research farms. Numerous other producers are also utilizing it. Much grazing on it has been with beef cows or maturing heifers in an integrated forage system, therefore, limiting the accumulation of specific animal performance data. During these same periods, however, some Noble Foundation pastures were used in part, or wholly, by younger beef cattle that permitted recording of animal weight gains.

Pasture Management

All crabgrass and Bermudagrass pastures were nitrogen fertilized during the early part of the season. Rates of nitrogen on crabgrass varied from about 60 pounds actual nitrogen per acre on dryland to 223 pounds per acre under irrigation. Applications on irrigated pastures were split in about 56-pound increments. Bermudagrass pastures received about 60 pounds actual nitrogen per acre. Crabgrass pastures were tilled at some interval between fall and late winter and broadleaf weeds were controlled with herbicides as necessary. Grazing was not always done at the best plant growth stages for good animal performance and brief notes on the pastures are included in the tables. Pasture condition must be considered in the evaluation of the data.

Animal Performance

All information discussed herein is from single replication demonstration crabgrass pastures in southern Oklahoma. All tabulated data is arranged with the lowest average daily gain per head (ADG) at the top of the column to the best at the bottom.

Calf groups 1, 2, and 4 were grazed on mature stage of growth pastures and ADG ranged from 0.63 to 0.90 pound (Table 1). The point of these gains is that the calves did respectably well on grass that was in complete maturity at turn-on time. Think about that! What other grasses do we have that can produce good gains on beef calves when the grass is in the full seed ripe stage? There aren't many!

The weanling heifers of group 3 did not do as well on the good to fair pasture as expected. They produced 0.85 pound ADG for 86 days. This is satisfactory for weanling cattle during mid summer but the cause for the gains being lower than expected on good pasture is not known.



Yearling replacement heifers utilizing high quality, lush, planned crabgrass pasture.

Calf groups 5 through 8 were fortunate to graze good to lush condition pasture and they produced an average 2.07 pounds ADG. Group 7 weanlings were on pasture only 15 days and that gain may not be very important, but they did gain well. Calf groups 5 and 6 were on pasture reasonably long periods of time and they gained very well considering the seasons. Forage during 1978 was excellent initially, but very dry by summer's end. The 1979 season was very droughty throughout the season and while calf group 5 started on good pasture, they spent the last 45 days grazing pasture that was severely dried. Considering that, the 1.33 pounds ADG is satisfactory.

Overall ADG on crabgrass was 1.42 pounds and that is satisfactory for a warm season grass. Note that we have never gotten negative gains on crabgrass pasture. Even poor pasture has produced gain.

Grass Comparison

Calf groups 1, 2, and 4 were also used to compare performance on crabgrass relative to Bermudagrass (Table 2). These data must be qualified. It is important to remember that all groups on Bermudagrass were always grazing grass that was nonmature, green, and growing while crabgrass calves were always on mature, seed ripened grass. We have not yet had a comparison of groups on comparable condition pastures. The point is that overall ADG on mature crabgrass was very near that of good, nonmature, growing Bermudagrass.

With comparable condition pastures, crabgrass is expected to produce better ADG than Bermudagrass. Our

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Credit is extended to Wayne Dobbs, Clay Wright, and their farm technicians for assistance in gathering this data.

Table 1. Beef calf average daily gains on crabgrass.

Calf group	Calves and season	Days on pasture	Initial group weight	Average daily gain	Pasture notes
1	Weanling steers—1975	27	433	0.63	Mature, dryland
2	Stocker steers—1975	61	430	0.72	Mature, dryland
3	Weanling heifers—1978	86	473	0.85	Good to fair, dryland
4	Stocker heifers—1974	31	467	0.90	Mature, dryland
5	Stocker steers—1979	85	654	1.33	Good to poor, dryland
6	Stocker steers—1978	123	424	1.85	Good to fair, irrigated
7	Weanling steers—1976	15	431	2.23	Lush to good, dryland
8	Stocker steers—1976	49	468	2.87	Lush to good, dryland
Overall group average		60	473	1.42	

laboratory work from pastures and research plots for several years has shown good, well-managed crabgrass forage protein and digestibility to stay above 10% and 55% until the end of summer grazing. Protein generally ranges 12% to 18% while digestibility ranges 60% to 75% during spring to late summer grazing. In research studies, crabgrass had better palatability than Bermudagrass in 80% of the trials.

Post Crabgrass

All calves grazed crabgrass as the first pasture after purchase or weaning and initial conditioning. There is no record of previous performance, but there has been some check on gain after grazing crabgrass. Group 2 calves grazed good Bermudagrass pasture until winter and then they grazed small grain winter pasture and were fed Bermudagrass hay and cubed supplement until January after winter pasture grazing terminated. They produced 0.84 pound ADG during this 140-day period after gaining 0.72 pounds ADG on crabgrass for 61 days. Calf group 7 grazed good Bermudagrass for 49 days to produce 0.48 pound ADG after gaining 2.23 pounds ADG on crabgrass for 15 days. Calf group 8 grazed good Bermudagrass for 49 days to produce 0.37 pound ADG after gaining 2.87 pounds ADG on crabgrass for 49 days. It is impossible to determine precisely why the calves generally gained poorly following crabgrass, but it is likely a combination of compensatory gain on crabgrass and better crabgrass forage relative to follow-up later season forage from Bermudagrass. As an example, crabgrass pasture for group 2 averaged 18.8 crude protein, while follow-up Bermudagrass pasture averaged 14.7% crude protein.

Carrying Capacity

Due to the integrated livestock enterprises used on the pastures, calf stocking rates per acre cannot be tallied for all cases. However, groups 5 and 6 essentially utilized all of their respective pasture, and group 5 calves were stocked at 1,059 pounds of calf per acre going onto pasture which was grazed 85 days with only one useful rainfall. Group 6 calves were stocked at 1,188 pounds of calf per acre going onto pasture which was grazed 123 days. This pasture produced mid-season forage surplus that was utilized by additional heifer calves. The pastures of group 5 and 6 produced 163 and 361 calf grazing days per acre respectively. Group 5 pasture was a dry season dryland pasture, while group 6 pasture was irrigated. All other pasture groups utilized about half of their respective pasture, leaving the remainder to be utilized by other livestock groups.

Implementing Crabgrass Use

Crabgrass is very widely adapted to soils and climatic characteristics. It is reported growing throughout the contiguous United States and many other countries. Most good forage production, however, is within the general areas where dryland summer crops are, or could be, produced. It does very well in these areas where annual rainfall ranges from about 25 to over 40 inches.

Dryland crabgrass pastures in these observations produced in the range of one to three tons of dry forage per acre depending on the season, how it was managed, and other

Table 2. Beef calf average daily gains on Bermudagrass and crabgrass.

Calf group	Calves and season	Pasture	Days on pasture	Initial group wt.	ADG	Pasture notes
1	Weanling steers—1975	Bermudagrass	27	429	0.96	Good, plentiful
		Crabgrass	27	433	0.63	Mature, plentiful
		Difference due Bermudagrass			0.33	
2	Stocker steers—1975	Bermudagrass	61	429	0.80	Good plentiful
		Crabgrass	61	430	0.72	Mature, plentiful
		Difference due Bermudagrass			0.08	
4	Stocker heifers—1974	Bermudagrass	31	456	0.71	Good, plentiful
		Crabgrass	31	467	0.90	Mature, plentiful
		Difference due crabgrass			0.19	
1,2,4	Overall	Bermudagrass			0.82	
		Crabgrass			0.75	
		Difference due Bermudagrass			0.07	

factors. The irrigated pasture produced 4.58 tons of dry forage per acre. Remember, good production does not just happen, there was some plan and management involved, but the scope of this writing prohibits such elaboration.

Crabgrass is a warm-season annual that can be managed to perpetuate itself through volunteering plants, thus nearing the nature of a perennial forage in season-to-season persistence. This persistent characteristic bears some thought in these days of conservative energy use in managing high quality tame pastures.

Crabgrass stands can often be developed from thin natural populations, and natural stands dense enough to use as pasture are sometimes available. On areas free of crabgrass, excellent stands can be developed by planting two to 10 pounds pure live seed (pls) per acre during early spring on a good seedbed using usual small seeded grass planting methods. Our research has shown the best early developing stands to come from plantings of 5 pounds pls in a 7-inch row

or 10 pounds pls broadcast. If stands are sparse, they become more populated by the stoloniferous characteristic of well-managed crabgrass and its ability to produce seed one season and volunteer the next.

The grass is not one to base an entire grazing system on, but production, quality, and ADG produced from it are certainly good enough for it to be considered in an integrated forage program. Because of its good quality crabgrass pasture is often utilized as forage for replacement heifers, first-calf heifers, or weanling cattle. Final pasture clean-up is generally accomplished with cows or bulls to realize complete utilization by summer's end.

Crabgrass is only one of numerous plants not realized and generally managed as a forage species. We should be aware and accept these plants for what they can do for our livestock. Forget some of the teaching and tradition that relegates them to a weedy or otherwise totally undesirable species.

Short-Duration Grazing— A New Concept in Ranching

Short-duration grazing is a new idea drawing plenty of interest from New Mexico ranchers, says Chris Allison, Extension range scientist at New Mexico State University.

The short-duration method employs several pastures which concentrate animals on a small area. Livestock are rotated among the pastures in such a manner that they are in one pasture for one week or less. Rest periods for a pasture never exceed 60 days.

The key to the system's success lies in the "hoof action" of the livestock. This hoof action tends to break crusted soil and allow precipitation to infiltrate the soil more readily. This allows plants to take advantage of the increased soil moisture.

The short-duration system employs a pasture layout in the shape of "wagon wheel" with pasture cross fences being the "spokes" radiating out from a "hub" which contains water and animal handling facilities.

This grazing method is new to the United States and very few systems have been implemented yet. In fact, many New Mexicans heard about it first during the Texas Sheep and Goat Association meeting held recently at San Angelo.

The grazing method has substantially increased the carrying capacity of many ranches in Rhodesia and South Africa. Some ranchers there are reporting increased stocking rates by three times or more. These results were reported at the Texas meeting.

Research is being initiated in New Mexico and Texas to study short-duration grazing, its productivity and benefits.—New Mexico State Univ., Dept. Agr. Inform.

Insect Sex Attractants Will Create a New Industry

Many scientists throughout the world believe that sex attractants will provide the agricultural industry with hazard-free methods for assisting with the management of certain insect pests and will provide the chemical industry with new marketing opportunities.

Scientists at the Lethbridge Research Station, in coopera-

tion with the National Research Council, have developed species-specific sex attractants for 14 species of Lepidoptera, mainly cutworms, that attack agricultural crops. This work involved the laboratory and field screening of many combinations of highly purified chemicals. These sex attractants are now being used by entomologists at Lethbridge and at other research stations across Canada, and in the U.S.A., for monitoring the population densities of these particular pest species. Eventually they will be used to provide growers with an early warning systems for cutworm infestations.—

D.L. Struble in Lethbridge *Weekly Letter*

Beefing up for the Ground Round

University of Arizona meats scientist John Marchello notes that the demand for ground beef is growing so rapidly that more and more steer and heifer beef is joining the cull cows and bulls to supply hamburger for the nation's many fast-food restaurants. The three busiest fast-foot chains use the equivalent of 40,000 head of cattle per week. In fact, Marchello indicates that breeders would have a sure winner if they could guarantee animals providing only steaks and ground beef.

Conservation: the Ticket Plans

National Assn. of Conservation Districts proposes the green ticket plan to identify land users who voluntarily comply with local conservation standards for soil, water and/or air. Land managers joining the plan would work with USDA-SCS to develop practical ways to meet specific local problems. These managers then would receive green tickets certifying to the validity of each individual plan. Those green tickets would be renewable yearly based on supporting evidence that the conservation plan is being followed. The conservation district could conduct spot checks but would not check every participant every year. NACD hopes that specific economic incentives would be offered plan participants. Opponents of this voluntary plan offer what has been labeled the red ticket plan—a plan that would make specific conservation practices mandatory.

Tuition is now so expensive that any kid who can earn his own college tuition doesn't need a college education.