

Water Use by Categories in New Mexico Counties and River Basins, and Irrigated Acreage in 1995

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5.6. WATER REQUIREMENTS FOR BEEF CATTLE

Sweeten (1990a) studied drinking water requirements of 28,000 beef cattle on a feedlot in Texas over a period of 11 months during 1984 and 1985. Meter records from the municipality which provided water to the feedlot indicated an average consumption of 7 gallons per head per day (gpcd) and a range from 4.2 gpcd in the winter to 10.3 gpcd in the summer. Analysis of the data showed that drinking water requirements can be estimated at 0.48 gallons of water per pound of dry feed consumed. On the basis of this criteria, the data shown in Table 5.1 was developed. Given an 80% dry matter ration, an 800-pound animal will consume 9.6 gallons of water per day. A 10,000 head feedlot would require a continuous pumping rate of 67 gallons per minute (gpm) to meet the average demand and approximately 134 gpm to meet the peak demand. The pumping rate required for an 8-hour day utilizing a storage reservoir would be at least 200 gpm for a 10,000 head feedlot, and 400 gpm to meet the peak demand.

In 1990, the average weight of a steer in New Mexico was about 764 pounds (New Mexico Agricultural Statistics Service, 1991). Using the guidelines developed by Sweeten, the average water requirement per head of beef cattle on an 80% dry matter ration would be 9.2 gallons per day. Allowing for trough water losses would increase the water requirement slightly. For the purpose of this water use inventory, withdrawals for beef cattle are computed on the basis of 10 gpcd and depletions are assumed to equal withdrawals.

Table 5.1. Drinking water requirements for beef cattle in gallons per capita per day (gpcd). (Source: Sweeten, 1990a).				
Liveweight (lbs/hd)	Dry Feed Consumption (lbs/hd/day)	Water Required (gpcd) Dry Matter in Ration (%)		
		70	80	90
600	12	8.2	7.2	6.4
800	16	11.0	9.6	8.5
1000	20	13.7	12.0	10.7
1200	24	16.5	14.4	12.8

Note: To get gpcd, divide dry feed consumption by the percent of dry matter in ration expressed as a decimal and multiply the result by 0.48.

5.7. WATER REQUIREMENTS FOR MODERN DAIRY BARNs

In California, where strict air and water quality standards have been enacted, and prolonged drought has dried up the supply of cheap subsidized water farmers count on for the irrigation of pastures, dairymen have fixed their gaze on the land of enchantment in search of greener pastures. Eager to attract new business to give new life to a sagging economy, New Mexico bankers have made an extensive effort to seize this opportunity by enticing dairymen from California and Arizona to relocate in New Mexico. Dairymen have been attracted to New Mexico by inexpensive land, the availability of water, the low price of feed such as alfalfa, and a hospitable climate (McCutcheon, 1991). In Chaves County alone, the number of dairy cattle has more than tripled

5.9. REFERENCES

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