

	Cattle	Swine	Poultry
pH	Under 5.5 or over 8.5—Possible Problems Under 5.1—increase problems related to chronic/mild acidosis, leads to reduced milk production, low milk fat, poor gains and growth. Over 9.0—result in problems related to chronic/mild alkalosis		Under 6.0—possible problems Under 6.3 may decrease performance
Hardness	No adverse effects	No adverse effects	No adverse effects
Sulfates	Over 250 mg/L: combined with high magnesium, may cause diarrhea in young stock Over 500 mg/L: may cause diarrhea in older cattle but overtime may get accustomed to, which leads to a reduction in symptoms Over 2000 mg/L: Possible problems	Over 1000 mg/L: possible problems	Over 250 mg/L: possible problems Over 50 mg/L: combined with high magnesium or chloride may also cause problems
Magnesium	Over 125 mg/L: possible problems Combined with high sulfates, may cause diarrhea		Over 125 mg/L: possible problems Over 50 mg/L: may cause problems if sulfate is higher than 50 mg/L
Iron	Over 0.3 mg/L: possible problems due to decrease in intake because of taste		Over 0.3 mg/L: possible problems due to bad odor and taste
Copper	Over 0.5 mg/L: possible problems. High levels may lead to liver damage.	Over 0.5 mg/L: possible problems	Over 0.6 mg/L: possible problems; bitter flavor and liver damage
Nitrate-Nitrogen	Between 10-20 mg/L: safe if feed is low in nitrates Over 20 mg/L: Could be harmful over a long period of time. Infertility and abortions, reduced gains, respiratory distress due to lack of oxygen and death. Membranes appear blue and blood is chocolate brown.		Between 3-20 mg/L: may affect performance Over 25 mg/L: possible problems
Lead	Over 0.10 mg/L: toxic	Over 0.10 mg/L: possible problems	Over 0.02 mg/L: toxic

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Total Coliform	Over 1/100mL: possible problems for calves Over 15 to 50/100mL: possible problems for adults		Over 50/100mL: possible problems Less than 1/100mL is desirable
Fecal Coliform	Over 1/100mL: possible problems for calves Over 10/100mL: possible problems for adults		
Total Dissolved Solids	Over 3000 mg/L: results in bad tasting water, which causes symptoms of dehydration and electrolyte imbalance.	Under 1000 mg/L: safe 1000-4999 mg/L: may cause temporary problems in animals not adapted to it 5000-6999 mg/L: avoid for breeding stock Over 7000 mg/L: unsafe	
Chloride	Over 250 mg/L: salty taste to water, leads to decrease intake and reduce milk production.		Over 250 mg/L: possible problems Over 14 mg/L: may cause problems if sodium is higher than 50 mg/L
Calcium	Over 500 mg/L: possible problems	Over 1000 mg/L: possible problems	No adverse effects
Manganese	Over 0.05 mg/L: possible problems due to decrease in intake because of taste		
Zinc	Over 25 mg/L: possible problems	Over 25 mg/L: possible problems	Over 1.5 mg/L: toxic
Sodium	Over 20 mg/L: possible problems for calves		Over 50 mg/L may cause problems if sulfate or chloride is high
Mercury	Over 0.01 mg/L: possible problems		

Note: mg/L = ppm

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