

Livestock Suitability Water Report

Livestock require large quantities of water to survive and perform to their maximum potential. With water being an essential nutrient which plays a major role in the basic functions of the body, it is necessary to assess the water source to make certain it is suitable for livestock consumption.

The better the quality of water, the better the productivity of livestock.

Livestock Suitability Parameters

Element	Low	Moderate	High	Very High
Nitrate (NO ₃)	<10	11--45	46--100	100+
Calcium	<50	51--80	81--120	120+
Magnesium	<30	31--60	61--90	90+
Sodium	<30	31--50	51--80	80+
Chloride	<70	71--150	151--300	300+
Sulfate Sulfur	<75	76--150	151--250	250+
pH	<6.0	6.1 -- 8.49	>8.50	*

Nitrate: Field runoff following heavy spring rain may cause nitrate levels to rise and fall dramatically in farm ponds. High nitrate levels are potentially harmful to livestock.

Calcium—Magnesium—Sodium: Excessive calcium, magnesium & sodium can have a detrimental effect on water quality.

Chloride: Though chloride is seldom found at toxic levels in water, it influences conductivity and can produce a salty taste which may reduce water intake.

Sulfate: When an excessive sulfate level is found in combination with high sodium and, or high magnesium, a laxative effect may results. It may also produce an objectionable smell & taste.

pH: Most water supplies have a pH between 6.0 & 8.5. This is ideal for most livestock. However, a pH below 6.0 may have an adverse effect on broiler performance and egg quality.

Conductivity (mmhos/cm)	TDS (mg/L)	Interpretation of Values
Less than 1.56	Less than 1,000	Should present no serious problems.
1.56 - 4.70	1,000 to 3,000	May cause temporary diarrhea in livestock.
4.70 - 7.80	3,000 to 5,000	Will probably cause diarrhea and temporary refusal of feed. Not recommended for poultry.
7.80 - 10.90	5,000 to 7,000	May be used under some conditions. Not recommended for pregnant or lactating animals.
10.90 - 15.60	7,000 to 10,000	Unfit for swine and other animals subjected to heat stress or high water loss.
More than 15.60	More than 10,000	Not recommended for use by any livestock.

Conductivity & Total Dissolved Solids: Conductivity/TDS is used as a general measure of water quality. Water containing high levels of dissolved solids are said to be saline. Salinity should not be confused with hardness. Saline water can be very soft if it contains low levels of calcium and magnesium.

Element	Maximum Level (mg/L)	Element	Maximum Level (mg/L)
Aluminum	5.00	Fluorine	2.00
Arsenic	0.20	Lead	0.10
Boron	5.00	Nickel	1.00
Cadmium	0.05	Mercury	0.01
Chromium	1.00	Selenium	0.05
Cobalt	1.00	Vanadium	0.10
Copper	0.50	Zinc	25.00

Toxic Elements: Certain elements, even at very low levels may be toxic to livestock because of cumulative effects. Maximum allowable levels are shown in the above table.