

mineral needs of LIVESTOCK



THE BASIC THREE -- SALT, PHOSPHORUS, CALCIUM

Why Your Animals Need Them

Salt

Your animals need plenty of salt to make efficient use of your feed.

Researchers found that hogs on a ration without salt needed 562 pounds of feed per 100 pounds of gain. Another lot on the same ration plus salt gained twice as fast and needed only 363 pounds of feed per 100 pounds of gain.

Phosphorus

Lack of phosphorus causes rough hair coats and slow growth. Animals also have poor appetites (they chew rocks, bones, wood, etc.) make poor use of feed and, in severe cases, fail to breed and reproduce. Their blood needs phosphorus to help carry nutrients to different parts of the body.

NDSU LIBRARIES

NDAC Extension Service, Fargo

NORTH DAKOTA AGRICULTURAL COLLEGE

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Cereal grains and protein supplements are fairly good sources of phosphorus. Lush, fast growing grass is a fair supplier. Almost all roughages except legumes are poor sources of calcium.

Phosphorus content of all grasses and hays decreases with their maturity. It usually drops to dangerously low levels in prairie grass by September, and even earlier with dry weather.

Calcium

Too little calcium causes weak bones, stiff and swollen joints, lameness and reduced milk production.

With North Dakota soils high in calcium good quality grasses and hay contain fair amounts. Legumes have large amounts.

Grains are poor suppliers. So are protein supplements and low quality roughages.

BUILD A SALT BOX

Feed your minerals and salt 50-50 free choice in a protected box. (see plans at end of circular)

FEEDING MINERALS

★ BEEF CATTLE

Salt and trace minerals - Use loose trace mineral salt: Provide about 1½ pounds per head per month.

Block salt gives minimum requirements but cattle will rarely eat enough to meet their needs.

If you have salt deposits or salty water on your farm, cattle won't eat as much salt, but it is a good idea to provide it, free choice anyway.

Phosphorus and Calcium - Here are three mixture possibilities.

1. A half and half mix of dicalcium phosphate and loose salt.
2. A half and half mix of steamed bonemeal and loose salt.

3. A commercial mineral supplement containing at least 6½ percent phosphorus. In western North Dakota where low phosphorus prairie grasses are the main feed source, this mixture should have at least 10 percent phosphorus and not more than 30 percent calcium. You can find several high phosphorus mixes on the market. Most commercial mixes do not contain enough salt -- feed salt in addition. Enough calcium will be supplied when these suggested mineral mixtures are fed.

★ SHEEP

Salt - Provide from ½ to 1 pound of salt per ewe per month, free choice and preferably in the loose form. Trace mineralized salt is best.

Sheep will tend to use more salt if you feed high silage rations or have them on fast growing pasture.

One pound phenothiazine mixed with each 10 pounds of salt will help control internal parasites. Feed phenothiazine in the salt during the pasture season.

Phosphorus - Feed a mineral mixture containing at least 6½ percent phosphorus and not over 30 percent calcium. The mix as suggested for cattle also works for sheep.

A high roughage diet for sheep may need to be reinforced with additional phosphorus.

Calcium - Your phosphorus mixture will double for the calcium needs of your sheep.

Sheep are not apt to lack calcium if you feed good quality legume hay. Additional calcium may be needed if they are eating such poor quality roughages as straw or corn stover.

★ HOGS

Salt - If you give salt in loose form, pigs will regulate their own intake. If you feed a complete ration, adding ½ percent salt will fill the bill. Trace mineralized salt is recommended.

Your hogs can easily be short of calcium since their main feeds of grain and protein supplement are low in this mineral.

Calcium is especially important in gestation-lactation rations for sows. The lactating sow has unusually high requirements and unless calcium is supplied may have a skeletal breakdown in the latter stages of lactation.

Phosphorus - Where needed, bone meal, dicalcium phosphate and Curacao phosphate can be used in a mineral mix.

High protein rations usually don't need to be bolstered with additional phosphorus. In some grains and concentrates not all the phosphorus is available. This is the case with oats.

Calcium - Your pigs will get enough calcium from many commercial mineral supplements. If these are not available, use a simple mineral mixture of 40 percent steamed bone meal (or dicalcium phosphate or similar mineral), 40 percent ground limestone and 20 percent trace mineralized salt. Feed it free choice.

TRACE ELEMENTS

Trace mineral salts have been suggested because livestock need the following elements.

Iodine - North Dakota is an iodine deficient area. A shortage leads to poor reproduction, the birth of hairless litters for hogs and goiter or big neck in cattle, sheep and hogs.

Make sure you use a fresh mineral mixture or salt. Iodine escapes easily into the air. Some or all of the iodine content may be lost from mineral mixtures stored for long periods.

Iron - Little pigs are short of iron from the start. With their rapid growth, deficiency will show up usually by the third day. Make use of the several different iron compounds available for prevention of anemia in little pigs.

Copper - Copper is needed for many vital body functions.

Cobalt - Cobalt is extremely important, particularly for cud-chewers, because the rumen bacteria need cobalt for manufacturing nutrients--vitamin B₁₂ is an important example. A few cents worth of cobalt will feed a large livestock herd for at least one year.

Manganese - Except for chickens, manganese is not thought to be lacking in rations. We need more information about the extent and seriousness of deficiencies.

Magnesium - Enough magnesium is usually available, but small amounts are included in many trace mineral mixtures anyway.

POISONOUS MINERALS

Fluorine is the most dangerous--avoid mixtures which contain more than 0.3 percent of it. Excess fluorine is likely to cause lameness, mottled teeth and poor production.

Other poisonous materials possibly helpful in small amounts but dangerous in larger portions are selenium, molybdenum and arsenic.

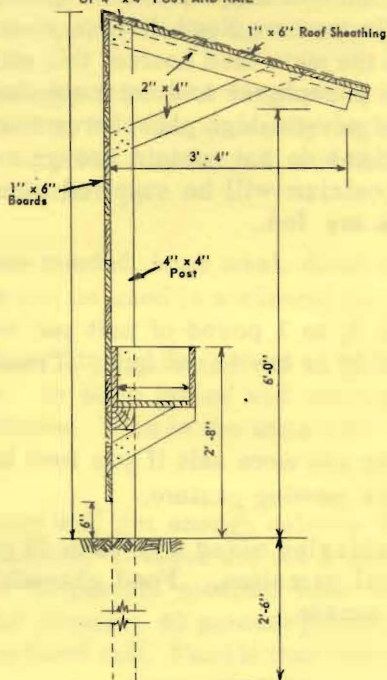
TABLE OF MINERAL SUPPLEMENTS

<u>MINERAL SUPPLEMENT</u>	<u>% CALCIUM</u>	<u>% PHOSPHORUS</u>
Bone meal, steamed	28	13
Curacao phosphate	35	15
Defluorinated rock phosphate*	21	9
Defluorinated rock phosphate *	29	13
Defluorinated super phosphate	28	12
Dicalcium phosphate	26	18
Ground oyster shells	38	
Limestone (98%)	38	
Wood ashes	21	

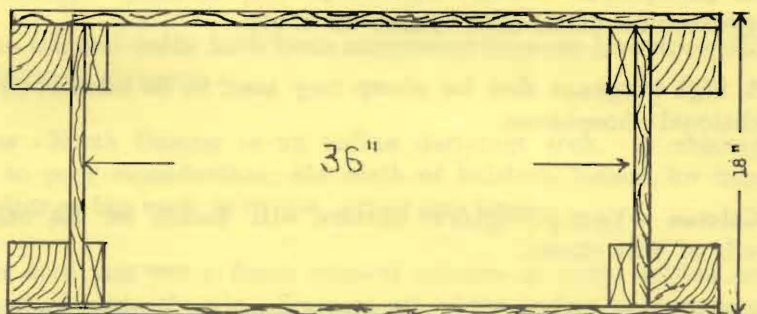
* Variability in source ranges accounts for the difference in analysis.

LIVESTOCK SALTBOX

NOTCH RAFTER INTO OUTSIDE
OF 4" x 4" POST AND NAIL



MINERAL BOX



MINERAL BOX, TOP VIEW. USE 4X4 INCH POSTS, SET 18 INCHES ABOVE
GROUND. PUT LEGS INTO GROUND 1 FOOT OR DEEPER.

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