

7-1921

## Swine Mineral Mixtures

John M. Evvard  
*Iowa State College*

Follow this and additional works at: [http://lib.dr.iastate.edu/iaes\\_circulars](http://lib.dr.iastate.edu/iaes_circulars)



Part of the [Agriculture Commons](#), and the [Animal Sciences Commons](#)

---

### Recommended Citation

Evvard, John M., "Swine Mineral Mixtures" (1921). *Circular (Iowa State College. Agricultural Experiment Station)*. Paper 70.  
[http://lib.dr.iastate.edu/iaes\\_circulars/62](http://lib.dr.iastate.edu/iaes_circulars/62)

This Article is brought to you for free and open access by the Iowa Agricultural and Home Economics Experiment Station Publications at Iowa State University Digital Repository. It has been accepted for inclusion in Circular (Iowa State College. Agricultural Experiment Station) by an authorized administrator of Iowa State University Digital Repository. For more information, please contact [digirep@iastate.edu](mailto:digirep@iastate.edu).

---

# Swine Mineral Mixtures

**Abstract**

"Mineral Mixtures for Swine" is the title of a four-paged mimeographed pamphlet, No. G-21, issued by the Animal Husbandry Section in December, 1920. This pamphlet was prepared to facilitate the answering of numerous inquiries in regard to the feeding of minerals to hogs. It gave suggestions to swine men concerning the practical make-up and use of mineral mixtures.

**Keywords**

Animal Husbandry

**Disciplines**

Agriculture | Animal Sciences

## IOWA AGRICULTURAL EXPERIMENT STATION

C. F. Curtiss, Director

## ANIMAL HUSBANDRY SECTION

## SWINE MINERAL MIXTURES

By John M. Evvard

“Mineral Mixtures for Swine” is the title of a four-paged mimeographed pamphlet, No. G-21, issued by the Animal Husbandry Section in December, 1920. This pamphlet was prepared to facilitate the answering of numerous inquiries in regard to the feeding of minerals to hogs. It gave suggestions to swine men concerning the practical make-up and use of mineral mixtures.

Three mineral mixture formulas designed specifically for swine feeding were at that time suggested, and tentatively recommended. Our aim was to furnish suitable, practical and acceptable formulas, such as were justified not only by feed-lot practice, but by practical and technical experimental knowledge as well.

The three practical swine mineral mixture formulas are presented here-with:

*First: Simple Mineral Mixture.* Equal parts by weight of air-slaked lime and salt, or of wood ashes and salt. This mixture furnishes the main essential elements principally lacking in our corn and small grains.

*Second: A Simple, but More Complete Mineral Mixture.* Equal parts by weight of air-slaked lime, salt and bone meal (or spent bone black). This mixture differs from the simplest one in that bone is added, this addition insuring an abundance of bone-making materials.

*Third: A Fairly Complete Mineral Mixture.*

Salt, common, flake form.....	30.0 pounds
Spent bone black, or bone meal, finely ground, or bone flour	25.0 pounds
Commercial kainit, or potassium chloride, or wood ashes..	12.0 pounds
Sulfur, flowers of.....	10.0 pounds
Air-slaked lime, or limestone, finely ground.....	10.0 pounds
Glauber's salts or sodium sulfate.....	5.7 pounds
Epsom salts or magnesium sulfate.....	5.0 pounds
Copperas, or iron sulfate.....	2.0 pounds
Potassium iodide.....	0.3 pounds

Total.....100.0 pounds

This mixture carries most of the essential elements in practical and well-known forms. It is compounded so as to be acceptable to those who wish to have included such popular, time-honored and tried substances as sulfur, Glauber's salts, copperas, and others that are widely used in general swine-feeding practice.

These mineral mixtures may be self-fed, free-choice style, or combined with the feeds. About a pound per month per hog has been the suggested allowance when hand-fed.

There are no patents or copyrights on any of these formulas. There are no secrets in their compounding, inasmuch as they are simple mixtures of simple, commonly known and widely used substances. They are not perfect, but represent an effort to supply a pressing need. Later, these formulas will be modified, when we have more experimental work to justify changes. “Mineral mixture” experiments are now in progress.

Before suggesting the three tentative formulas given above, one preliminary test involving some seven months was conducted with gilts. The

test covered the breeding season and pregnancy period of the gilts, and also a two-months' suckling period on the gilts and their litters. Four groups of ten gilts each were fed. The basal ration allowed all lots was shelled corn and tankage. The sows were in dry lot up to about a week to ten days after farrowing, when they and their litters were transferred to bluegrass pastures.

Group I received no minerals. Group II received the "Simple mineral mixture," self-fed. Group III received the "Simple but more complete mineral mixture," self-fed. Group IV received the "Fairly complete mineral mixture," self-fed.

In this preliminary investigation the results showed up favorably for mineral feeding; in general, the groups receiving minerals made a somewhat better showing than the "No mineral" check group. In many particulars Group IV, receiving the "Fairly complete mixture," made the best showing.

However, further investigations, now in progress, are apparently showing up more favorably for the simple mixtures and less favorably for the complete than did the preliminary test. In the "Mineral mixture" comparisons run to date, the basal ration has been corn and tankage, a very good combination of feeds, a combination generally considered as not needing to be supplemented with a mineral mixture. It appears, however, that even so good a ration as corn and tankage may be made somewhat more efficient thru proper mineral additions. Ordinary rations poor in minerals should show a greater benefit from mineral feeding.

While we have secured in our various tests a good many favorable results thru the feeding of such common mineral substances as lime, salt, bone meal and other similarly classed materials, and while our preliminary results with "mineral mixtures" for swine have shown up so far in favor of mineral feeding, yet we cannot as yet say definitely just what kind of general mineral mixture is best.

Our preliminary results on the feeding of the mineral mixtures, formulas for which are given, must not be considered as final or conclusive, but only as *suggestive* at the present time. Reports of investigations now in progress will be made public in the near future.

The main deduction to be drawn from our "mineral" experiments to date is that proper "mineral feeding" has, when considered on the whole, been of some advantage under the conditions of our tests.

Concerning the use made of the above prescribed formulas, as given out in December, 1920, it is in order to state that a good many farmers are buying the specified individual ingredients and mixing them to their satisfaction. Many county agents have made these mixtures in rather large quantities, and distributed them to their swine growers. Druggists in some localities have filled these formulas for their patrons.

The Iowa Agricultural Experiment Station has no knowledge of the ingredients and no responsibility for the mineral mixtures put out by any commercial firm. The name "Ames College Mineral Mixture" has never been authorized, and its use commercially is forbidden.

The Iowa Agricultural Experiment Station has not yet published any results of experiments in the use of mineral mixtures for swine. Some results, purporting to have come from the Iowa Station as official, were put out by a graduate student, without authorization or official approval, and the presentation of these and all other purported results of this nature, is repudiated by the Iowa Agricultural Experiment Station as misleading and inaccurate.