Grow Healthy Chicks

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OUTLINE OF 1928 PROGRAM

1. CLEAN GROUND
   Raise chicks on ground that has not been used for poultry of any kind for at least one year.

2. CLEAN BROODER HOUSE
   Follow the steps listed below in preparing the brooder house for chicks:
   a. Clean, scrape and sweep the floor and sidewalls.
   b. Scrub brooder house thoroughly with boiling lye water, using one pound of Lewis lye for each 35 gallons of water.
   c. Allow the house to dry for two or three days.
   d. Disinfect brooder house with a reliable disinfectant such as a 5 per cent solution of compound cresol using 12 tablespoonfuls of cresol to each gallon of water.

3. CLEAN CHICKS
   Obtain chicks from parent stock that are not reactors to a test for bacillary white diarrhea.

4. HATCH CHICKS EARLY
   Hatch chicks of the general purpose breeds such as Orpingtons, Plymouth Rocks and Rhode Island Reds, between April 1 and 15 and light breeds such as Leghorns and Anconas between April 15 and May 15.

5. CLEAN FEED
   Feed an all-mash ration only in clean hoppers or boxes.
Grow Healthy Chicks
D. C. HENDERSON, Poultry Specialist

The prevention of chick troubles depends upon the adoption and carrying to completion of a definite sanitation plan for raising chicks. The sanitation plan as outlined for members of the South Dakota women's extension clubs is based upon the experiences and results of cooperators in a Grow Healthy Chicks campaign carried out during the season of 1927. The results of this program are shown in Table 1. The program consisted of the following four points:

1. **Clean Ground**: Chicks were raised on ground not used for poultry during the previous year.

2. **Clean Brooder House**: Brooder house was thoroughly scrubbed with boiling lye water and then disinfected with a reliable disinfectant.

3. **Clean Chicks**: Chicks were obtained from parent stock that did not react to a test for bacillary white diarrhea.

4. **Clean Feed**: An all-mash ration was fed in clean hoppers or boxes.

**Table 1.—SUMMARY OF 51 FLOCK OWNERS IN 1927 GROW HEALTHY CHICKS CAMPAIGN**

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Chicks Hatched</th>
<th>Total Number of Chicks Dead to Aug. 1</th>
<th>Percentage of Chicks Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Followed four point program</td>
<td>4403</td>
<td>808</td>
<td>18.3</td>
</tr>
<tr>
<td>Followed 3 out of 4 points</td>
<td>8772</td>
<td>1742</td>
<td>19.8</td>
</tr>
<tr>
<td>Followed 2 out of 4 points</td>
<td>6477</td>
<td>1815</td>
<td>28.0</td>
</tr>
<tr>
<td>Followed 1 out of 4 points</td>
<td>2175</td>
<td>625</td>
<td>28.7</td>
</tr>
<tr>
<td>Followed none of points</td>
<td>4590</td>
<td>2410</td>
<td>52.5</td>
</tr>
<tr>
<td>Totals</td>
<td>26417</td>
<td>7400</td>
<td>28.0</td>
</tr>
</tbody>
</table>

Table 1 shows that the success of flockowners varied directly with the number of practices followed throughout the year. The flockowners that carried out one point raised a higher percentage of chicks than flockowners that did not carry out any of the points advocated. The flockowners that carried out two points raised a higher percentage of chicks than those that carried out but one point. The most successful flockowners adopted the four point program.

It was found from the first year's experience in the Grow Healthy Chicks program that one other point was of importance. This is included in next year's program, thus making a five point program for 1928. This point emphasized by a majority of flockowners was the importance of having chicks of the general purpose breeds such as Orpingtons, Plymouth Rocks and Rhode Island Reds hatched between April 1 and 15 and chicks of the light breeds such as Leghorns and Anconas hatched between April 15 and May 15. The early hatched chicks were healthier and matured in a shorter time, thus returning a larger profit than the late hatched chicks.

Poultry diseases cause the largest loss of chicks in the thickly settled poultry sections of South Dakota. In the part of the state east of the Missouri River there has been a rapid increase in the number of chickens on farms during the last few years. There has been a corresponding increase in the amount of trouble from poultry diseases until the prevention of poultry diseases has become one of the greatest problems facing the flockowners in this section. On the other hand, in the part of the state west of the Missouri River where the average farm flock
is small, the prevention of poultry diseases is of minor importance. Poultry troubles go hand in hand with an increase in the density of poultry population. This would indicate that if poultry is to continue as an important source of income on the farm more time and attention must be given to the prevention of poultry diseases.

**Clean Ground**

Ground is considered clean for the purpose of raising chicks when it has not been used for poultry of any kind for at least one year. The range that was used for poultry this year, if it has become contaminated, will harbor the infection during the winter. Chicks will pick up whatever infection is present if they are put on this contaminated range the next spring. It is a mistaken idea that the chick range will be free from infection if it is subjected to freezing and thawing during the winter. Exposure to sunshine during the summer is a much more efficient soil purifier. The old chick range should therefore be plowed up and either seeded to alfalfa or put into a cultivated crop.

The range for chicks should be located on land that was not used for poultry during the past season. Clean ground is essential in raising healthy chicks. In the second place, the range should be located close enough to the dwelling to make it convenient for the farm woman to care for the chicks. Convenience of location is a secondary factor that should be considered only after the chick rearing range is located on clean ground.

A desirable location for the chick range would be in an alfalfa field which joins a corn field. The brooder house should be located on the edge of the corn field, facing the alfalfa field. Then the chicks run in the alfalfa field during the cool part of the morning and afternoon and spend the hot part of the summer day in the shade of the growing corn. Growing crops, such as corn, must be depended upon to furnish shade for chicks in parts of South Dakota. Shade trees are uncommon in

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**Figure 1.—A GROW HEALTHY CHICKS PLAN PAYS**

Mrs. J. R. Michael’s flock of White Leghorn chicks raised under the 1927 Grow Healthy Chicks plan. Clean ground, a clean, portable brooder house, clean chicks, and clean feed are essentials for success in raising chicks.
many sections of the state. Then too, in sections where shade trees are present, the range is contaminated because it has been used for poultry for the past several years. Chicks that are started on clean ground should be continued on clean ground throughout the summer. There is little to be gained by putting chicks on clean range in the spring and allowing them to range on contaminated soil with the other poultry during the summer. Flockowners must get away from the old practice of trying to raise chicks on infected soil.

Some sort of fencing is usually necessary in carrying out a sanitation plan of raising chicks. If the field to be used for chicks is fenced with woven wire, one inch mesh wire netting may be stapled along the bottom of the permanent fence. This wire netting should be at least three feet high in order to keep the chicks from flying over it. The cost of the fencing will be an additional cost for the rearing of the chicks. However, the flockowners in 1927 were well repaid for the money invested in wire netting.

The wire netting fence is a temporary fence that is taken down as soon as the birds are ready for the laying house in the fall. At the close of the season the fence may be rolled up tightly and stored until it is to be used the next year.

The common house fly is an intermediate host in the life cycle for one variety of tape worm. Therefore, the range for chicks should be located far enough from the buildings to avoid infection of the chicks with tape worms by means of the house fly.

**Clean Brooder House**

A portable brooder house is an aid in preventing chick troubles. Germ and parasitic infection such as coccidian diarrhea or intestinal worms that are found in the soil may be avoided through the use of a

![Figure 2.—A DESIRABLE LOCATION FOR THE CHICK RANGE.](image)

Clean range for chicks is obtained by locating the brooder house in an alfalfa field which joins a corn field, provided the ground has not been used for poultry for at least one year.
portable brooder house placed on clean ground. The South Dakota State College Extension Service advises a 10x12 portable brooder house for chicks. A picture of the brooder house in use on the J. R. Michaels farm is shown in Figure 1. If interested in obtaining a blue print plan write for plan number 351. The cost is ten cents.

The brooder house should be thoroughly cleaned and disinfected before it is moved to clean ground. All of the droppings from last year should be scraped out of the house and disposed of.

Figure 3.—THE WISCONSIN ALL MASH RATION FOR CHICKS.

The sanitary feeding of the Wisconsin all mash ration in hoppers or boxes will help to prevent diseases in chicks which are picked up from contaminated litter.

After the manure is removed, the house should be thoroughly scrubbed with boiling lye water. Some flockowners use a large rendering kettle for this purpose and heat the water close to the brooder house. It is essential to have the water boiling. One pound of Lewis lye is advised for each thirty-five gallons of water. A thorough job of scrubbing the brooder house with boiling lye water is more essential than is the disinfecting. Unless the scrubbing is well done the disinfectant cannot get into the cracks and crevices to act. An old worn-out broom is useful in scrubbing the brooder house.

The brooder house should be left to dry for two or three days.

There are a number of reliable disinfectants or “dips” on the market that are used in disinfecting the brooder house. A five per cent solution of compound cresol is very effective. This solution is made by adding twelve tablespoonfuls of cresol to each gallon of water.

The brooder house is now ready to be moved to a new range. The house may be easily moved during the winter when there is snow on the ground.

Alfalfa leaves are very good material for litter. Straw may be used if alfalfa is not produced on the farm. The material that is used should not contain dust which quite often causes sore eyes in chicks.

The brooder house should be cleaned at least once in five days after it is used for chicks. Coccidiosis, a disease that causes a heavy loss in chicks in South Dakota each year, may be practically prevented by thoroughly cleaning and disinfecting the brooder house once in five days for the first eight weeks. Chicks may become infected with coccidiosis by eating feed contaminated with coccidiosis eggs. The chick throws off little eggs with the droppings which are perfectly harmless in the freshly expelled droppings. However, when these eggs are allowed to remain
in the droppings for a week, they become harmful and set up the disease in other chicks. Frequent cleaning of the brooder house breaks up this cycle and tends to prevent the trouble.

Mrs. William Naddy of Kidder, South Dakota, followed a very interesting practical plan of cleaning and disinfecting her brooder house last spring. The brooder house was cleaned on Monday mornings or on "wash days." After the washing of clothes was completed, lye was added to the warm wash water and the lye water used in scrubbing the brooder house.

Clean Chicks

Clean chicks, as the term is used, are free from bacillary white diarrhea. Bacillary white diarrhea can be traced directly from the hens to the chicks. Hens that are infected with the disease will produce eggs some of which are infected. The chicks produced from infected eggs are infected at the time of hatching. The loss of infected chicks is very heavy during the first few weeks.

The disease may spread through the droppings from the infected chicks to the healthy chicks. In this way the disease may spread to all the chicks in the flock. Some chicks recover. However, the so-called "cured" chick when mature quite often acts as a carrier of the disease. The disease is then spread to the next year's crop of chicks by the hen that harbors the infection.

Commercial hatcheries in South Dakota and neighboring states do not produce enough clean chicks or "bacillary white diarrhea tested" chicks to meet the need. Flockowners should obtain clean chicks if they have had losses from bacillary white diarrhea during the past season.

Hatch Chicks Early

Chicks should be hatched before the start of spring work on the farm. The farm woman, who is the poultry raiser in most instances, requires the help of a man in getting ready for the chick brooding season. Cleaning and disinfecting the brooder house, moving the brooder house to
clean range and setting up a brooder stove are all jobs that require the help of the farmer. The farmer will have more time to help in getting ready for chicks if they are hatched before the start of spring work.

Pullets must be hatched early if they are to lay high priced fall and winter eggs. The early hatched pullets get a good start before hot weather comes on and continue to grow rapidly during the summer. Early spring is the most favorable season for satisfactory growth of chicks. The late hatched pullets, on the other hand, are handicapped by the hot weather and are small and immature in the fall. These late hatched pullets do not start to lay before the next spring when eggs are low in price. Then too, the late hatched birds are usually the first ones in the flock to get colds and roup.

Cockerels are usually marketed as broilers. As the spring market price is higher than the summer price the early hatched chicks may be sold on a higher market than the late hatched chicks.

All of the chicks raised during the season should be hatched at the same time. They grow more rapidly and require less time and labor. Many small stunted chicks result each year when chicks of different ages are allowed to run together because the smaller chicks are forced away from the mash hopper by the larger and more vigorous birds. It may be a practical plan to purchase chicks from a reliable hatchery located in the neighborhood in order to obtain chicks of one age.

Chicks of the general purpose breeds such as Orpingtons, Plymouth Rocks and Rhode Island Reds should be hatched between April 1 and 15 and light breeds such as Leghorns and Anconas between April 15 and May 15. As a general rule, chicks of the general purpose breeds are hatched from two weeks to a month earlier than chicks of the light breeds. This will depend upon the section of the state and upon the season.

Clean Feed

All feed should be fed to the chicks in clean troughs or hoppers. As poultry raisers are having more and more trouble from disease, they are realizing the value of clean feed as a means of preventing disease. If feed is scattered in the straw or on the ground, the chicks will pick up whatever infection is present in the litter or on the ground. For example, coccidiosis is spread through infected droppings. If the chicks pick up feed from the litter they will also pick up the disease from the filth of the contaminated litter. An examination of the crops of chicks given feed in the litter will convince the poultry raiser of the large amount of filth picked up with the feed.

The Wisconsin all-mash ration when fed in hoppers or boxes has proven satisfactory. This ration consists of 80 pounds of yellow corn, 20 pounds of wheat middlings, 5 pounds of raw bone meal, 5 pounds of pearl grits, 1 pound of common salt and skimmed milk used freely. This ration is easily prepared on the farm. Extension Circular Number 196 gives information on the management of chicks and the use of the Wisconsin all-mash ration for chicks.