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1951

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BUILT-UP FLOOR LITTER *for the* LAYING HOUSE



EXTENSION SERVICE
UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE
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COOPERATING
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BUILT-UP FLOOR LITER FOR THE LAYING HOUSE

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Built-up litter is a logical name for a system of litter management. Four to six inches of fresh material is placed in the laying house and is allowed to build up with droppings and added litter until a depth of 8 to 12 inches is accumulated. With proper management and care, this system is satisfactory because the litter is easier to keep dry and provides better insulation than a thin covering on the floor. A layer of litter 8 inches deep absorbs more moisture than a thin layer. Because of the insulating effect and the bacteria action the floor is warmer and there is less condensation on it during the winter.

Built-up litter has greater insulation and moisture holding capacity when started in the summer or early fall, probably because certain beneficial microorganisms multiply in the litter when the right conditions exist. These organisms use moisture from the litter as they multiply.

The addition of hydrated lime helps to reduce moisture, not because of the direct absorbing capacity of the lime, but probably because lime stimulates the growth of the microorganisms in the litter. About 1 pound of hydrated lime to 10 square feet of floor space seems to be about right for the promotion of proper organism growth. Using excess lime is disagreeable for both the birds and caretakers.

Material

Any of the common litter materials can be used with this system of management. For the best results, litter should be of fine material and kept dry and loose. Chopped straw, shavings, or cobs, either whole or ground, are satisfactory. In some large commercial production units a combination of whole and ground cobs

is used, in proportions of 2/3 coarsely ground and 1/3 whole. Equipment has been constructed by some large producers to crush the cobs. It is the opinion of many who have used cobs over a period of years that they are more absorbent after partial decomposition. Some poultrymen prefer cobs which have weathered for at least one year before being used.

Advantages of Built-up Litter

Built-up litter has many advantages. The most important is the saving in labor. Floors also remain drier and warmer. The labor of cleaning is reduced since most poultrymen remove only a part of the litter during each cleaning. When whole corn is not fed as scratch feed in the litter, occasional stirring may be required to keep the litter from caking. This requires less labor than removing the litter completely and replacing it with fresh material.

The nutritional contributions of built-up litter are also significant. Experiments at the Ohio Agricultural Experiment Station indicated that certain vitamins, particularly B₁₂, are produced in the litter and made available to the birds. Better hatchability was obtained, particularly when the ration was deficient in certain essential elements.

There is less foot trouble among birds on built-up litter than where other systems are used.

Disadvantages of Built-up Litter

The disadvantages of built-up litter are minor compared with the advantages. The disadvantages are:

- (1) An ammonia odor tends to accumulate in the house when built-up litter is used, particularly during cold damp periods when it is impractical to furnish adequate ventilation. When lime is added, there is usually a period of 1 to 2 days when excessive ammonia is given off; therefore it is best to add the lime during a mild day when additional ventilation can be provided.

(2) Flies, parasites and rodents may breed in the litter. In tests at the New Jersey Experiment Station, hydrated lime made the manure unattractive to flies, and no maggots were produced in the treated litter. Similarly, when manure in dropping pits was treated daily with lime, mice avoided the droppings. Rats can be controlled from building homes in the manure beneath the screened in roosts by one or more of the following methods; 1. Keep bait boxes containing a Warfarin bait beneath the roosts, 2. Make the roosting racks rat proof by using 1 x 2 inch wire on top and solid boards around the edges, 3. By cleaning the accumulations from beneath the roosts when the manure become thick enough to encourage rats to burrow tunnels. Such cleanings need not be made more than 3 to 4 times a year.

(3) If the litter becomes contaminated with disease-producing organisms or parasites that cannot be destroyed by treatments, it should be removed immediately. Apparently, disease-producing organisms are not as likely to become established in a poultry house where built-up litter is used. In Ohio experiments, coccidiosis was controlled much more easily in brooder houses where built-up litter was used than in houses where litter material was changed regularly.

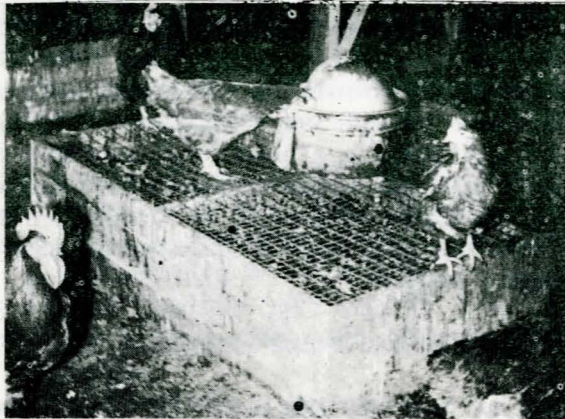
Differences in Building Requirements

In building or remodeling a poultry house where the use of built-up litter is anticipated, several factors in the construction need to be considered. It is advisable to extend the concrete foundations at least 12 inches above the floor level to prevent litter or droppings from accumulating on, and causing deterioration of the sills.

The ceiling height of the poultry house should be 7 or 7 1/2 feet to allow space for litter up to 1 foot deep. There is also a trend toward using earth floors, as the primary purpose of concrete floors has been for convenience in cleaning. When two-story houses are used, extra support is necessary for the second floor to carry the additional weight. It has been found, however, that wood floors do not deteriorate quickly where built-up litter is used properly. Records show that

wood floors have been in use for many years with apparently no harmful effect from moisture or the fermentation of the litter. Wood floors are usually treated with a protective coating of oil as a precautionary measure.

It is advisable to insulate the ceiling and side walls of the house to prevent moisture and frost from gathering on them and having the moisture from melting frost drop into the litter. Adequate ventilation is needed to carry off as much moist air as possible. The use of dropping pits or screened-in roosts is considered necessary to keep the litter loose and absorbent.



The platform for this type of automatic waterer needs to be 1 foot off the floor and 4 feet square.

Wet Spots Around Fountains

The wet litter problem is usually greater near the water fountains. This is often due to either leaky fountains or inadequate drains beneath the fountains. Some of the more progressive poultry producers are either placing their watering equipment on top of the roosts or constructing a screen-covered frame 4 to 6 feet square under each fountain and providing drainage below this frame. Water will splash several feet from

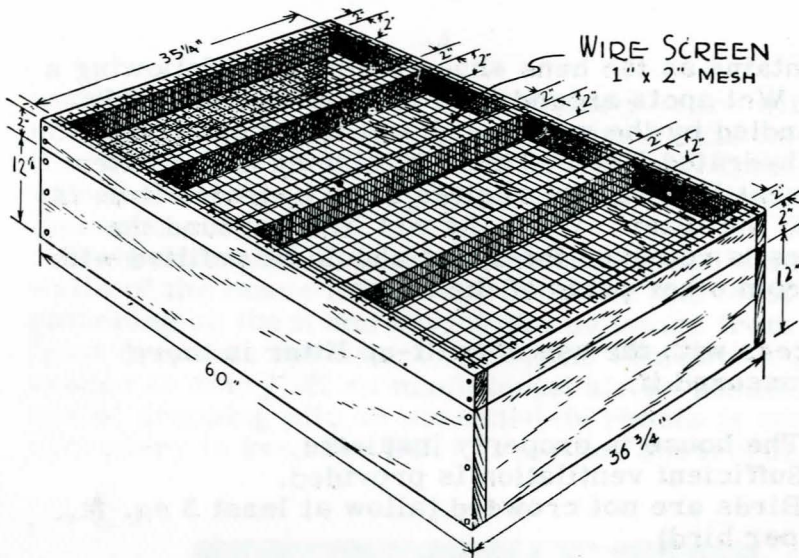
the fountains as the hens shake their heads following a drink. Wet spots around the fountains are probably best handled by the removal of wet litter or the addition of hydrated lime. Through stirring of the litter at frequent intervals is required when hydrated lime is added to the litter. When the wet litter around the waterers is removed the space should be refilled with litter from other parts of the house.

Success with the use of built-up litter is more nearly assured if:

1. The house is properly insulated.
2. Sufficient ventilation is provided.
3. Birds are not crowded (allow at least 3 sq. ft. per bird).
4. Dropping pits are used.
5. Waterers are properly installed and controlled.
6. The litter is stirred.

Proper care for built-up litter:

1. Start with 3 or 4 inches of litter in the summer or early fall.
2. As litter material becomes broken up, add more in small quantities until 6 to 8 inches has accumulated.
3. Feed whole corn on the litter to encourage hens to stir the surface often enough to prevent caking. This is important during cold weather.
4. Add 10 pounds of hydrated lime or rock sulphate per 100 sq. ft. of floor space and rake it in.
5. When wet litter around waterers is removed, replace it with litter from other parts of the house.



The frame is used as a feeding or watering platform with wire side up; as a roost with wire side down



Give built-up litter a chance by using dropping pits. If the roosts are low (24 inches high) about two-thirds of all droppings accumulate in these pits. This helps to prevent the litter from packing and caking.