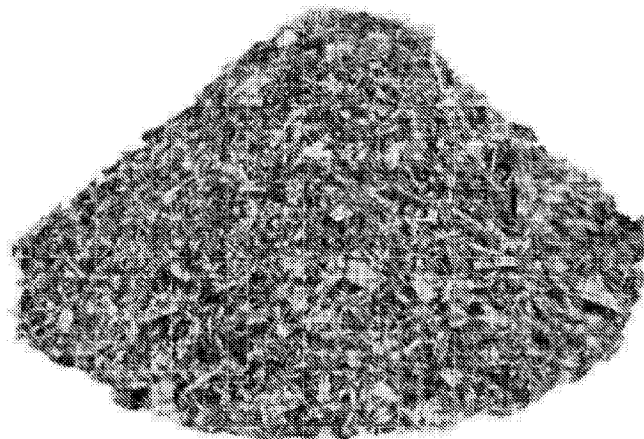




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(54) **Titre : LITIERE DE VOLAILLE A BASE DE COPEAUX DE BOIS ET DE SPHAIGNE**  
(54) **Title: POULTRY BEDDING COMPRISING WOOD SHAVINGS AND SPHAGNUM**



(57) **Abrégé/Abstract:**

There is provided a composition suitable for use as poultry bedding based on wood shavings and sphagnum. The free-flowing characteristic of the composition renders it very easy to apply and distribute on the floor of the stall. Moreover, the composition is easy to turn around and mix for the farmer. The composition exhibits effective absorption of ammonia for a complete production cycle for commercial poultry operations. A major effect of using the present composition is that foot burns and feet blisters of poultry observed with conventional bedding can essentially be avoided.

## **Abstract**

There is provided a composition suitable for use as poultry bedding based on wood shavings and sphagnum. The free-flowing characteristic of the composition renders it very easy to apply and distribute on the floor of the stall. Moreover, the composition is easy to turn around and mix for the farmer. The composition exhibits effective absorption of ammonia for a complete production cycle for commercial poultry operations. A major effect of using the present composition is that foot burns and feet blisters of poultry observed with conventional bedding can essentially be avoided.

## **Poultry Bedding Comprising Wood Shavings and Sphagnum**

### **FIELD OF THE INVENTION**

This present invention relates to an improved product for use as poultry bedding based on wood shavings and sphagnum. By using the composition foot burns of poultry observed with conventional bedding can essentially be avoided.

### **BACKGROUND OF THE INVENTION**

Wood shavings, sawdust, hulls, straw and a combination of these materials are widely used as poultry bedding. When used as bedding for poultry, these materials must serve two needs: absorbing moisture from the poultry droppings, and minimizing the release of gaseous ammonia.

Also blisters on the breasts of poultry may appear as poultry rub their breasts on the bedding as they stand from lying down positions. The wet bedding then promotes infection, thus down grading poultry final products. Existing bedding may also cause respiratory problems in poultry, which also down grade the quality of poultry final products.

Further, levels of ammonia in the barn increase as the grow progresses, to the point of burning eyes and throat of anyone entering barn. Such high levels of ammonia cause blindness in poultry, which limits mobility to feeders and inhibits growth. Also, these high levels of ammonia affect the overall health of poultry and promotes lung disease. Such an environment with high humidity and high ammonia levels affects overall health of poultry and increases the mortality rates in poultry.

Some additives have been proposed to attempt to deal with some of these problems. Those additives include clay additives to control ammonia. However, they are additives to existing bedding. The other disadvantages of existing bedding still remain. Accordingly, a different material is needed to make bedding. In particular, the additives

deal only with ammonia and do not provide a remedy for the moisture related problems. Also, those additives usually last only for a few weeks.

It is known to use various sizes of whole wood pellets or crumbled wood pellets as kitty litter or other household pet bedding. Also, it is known to use wood pellets as bedding for horses. Wood pellets are capable of controlling odours. However, they are not suitable for use as bedding for poultry. Expelling ammonia and associated nitrates to the atmosphere is an environmental concern. Also, ammonia levels are a major concern relating to worker health.

Therefore, there is a need to provide bedding material which is suitable for use as bedding for poultry and which is capable of absorbing ammonia and odours for a period long enough to be used in a full production cycle in commercial poultry operations.

The above-mentioned commonly employed litter materials are effective to a degree. However, they have a tendency to compact, reducing their capacity to release moisture and increasing the formation and release of ammonia gas. To counter these problems, the litter can be regularly stirred, for example weekly. However, the stirring itself releases substantial amounts of ammonia, requiring increased air circulation through the poultry enclosure. In cold weather, the air must be heated, further increasing the production cost. Of course, the stirring operation itself is an added cost of labor.

It is an object of the present invention object is to provide a poultry bedding which reduces the release of ammonia gas and has improved aeration for a more stable, safer release of moisture and ammonia gases.

Another object is to provide a poultry litter which requires little or no periodic stirring to effect satisfactory moisture and ammonia release.

## SUMMARY OF THE INVENTION

To achieve these and other objects, there is provided a composition suitable for use as poultry bedding, said composition comprising i) wood shavings obtained from soft wood, said shavings having sizes within a range from 1-50 mm, preferably 5-20 mm; and ii)

sphagnum of a light peat type, preferably with a pH of less than 6. Importantly the ratio of wood shavings and sphagnum ranges from 30 / 70 % vol/vol to 80 / 20 % vol/vol. The bulk density of the non-compacted composition is about 100 to 250 kg/m<sup>3</sup>.

In a preferred embodiment of the present invention the ratio of wood shavings and sphagnum ranges from 30 / 30 % vol/vol to 70 / 30 % vol/vol. When properly mixed the composition is easy to apply and distribute on the floor. Moreover, it is easy to turn around and mix for the farmer.

The wood shavings have a specific particle size, dryness and density. By combining the wood shavings with sphagnum the product is capable of functioning as physical bedding for poultry providing effective absorption of ammonia for a complete production cycle for commercial poultry operations.

The size of the wood shavings is highly important to achieve the above discussed improvement over existing beddings. Hence, the product has been sieved several times in order to obtain an optimal absorption ability. Preferably, the nominal lengths of the shavings are within a range from 1-50 mm and are preferably obtained from pine or fir wood. The preferred sphagnum is a light peat with a pH of less than 6.

In a second aspect the present invention there is provided a method for reducing ammonia levels in a poultry barn by applying on the floor 4-12 litres per m<sup>2</sup>, preferably 4-8 litres per m<sup>2</sup>, of the composition on the floor. Preferably, the composition is applied after the barn has been warmed to at least 30°C, preferably, 34 - 35°C.

In a third aspect there is provided a novel use of a composition of the present invention for preventing foot burns of poultry.

In a fourth aspect the composition of the present invention is used for the therapeutic treatment, either curatively or preventively, of blisters on the feet of poultry. Especially when the composition is applied on the floor with 4-12 litres per m<sup>2</sup>, preferably 4-8 litres per m<sup>2</sup>, of the composition, it has surprisingly been found that foot burns can be almost avoided.

## BRIEF DESCRIPTION OF THE DRAWING

Figure 1 show a sample of the composition.

## DETAILED DESCRIPTION OF THE INVENTION

The invention is in the following described in more detail.

The sphagnum used in the present invention may be any commercially available sphagnum. As used herein the term sphagnum includes all species of living plants within the genus sphagnum whether naturally growing or cultivated. Sphagnum moss includes sphagnum that has been harvested, regardless of whether it has been subjected to further processing such as milling. Sphagnum peat moss includes partially decomposed sphagnum and/or partially decomposed sphagnum moss. Although the present invention prefers commercially available dried sphagnum moss, principles are considered to extend to sphagnum and sphagnum peat moss as well.

The wood shavings are obtained from soft wood. Examples of suitable woods include Ponderosa, Lodgepole Pine, Spruce and White/Alpine Fir. For example, a mixture of Ponderosa and Lodgepole Pine is suitably used together with a mixture of Spruce and White/Alpine Fir.

As appears from Figure 1 the composition of the present invention may attain the typical form of a free flowing particle-based composition when properly mixed. This means that the composition is very easy to apply and to distribute on the floor of the stall. This also gives improved aeration of the bedding.

In a comparative study the composition of the present invention showed a significant reduction of the foot burns in a chicken stock relative to a comparative stock held on normal poultry bedding.

In the comparative study a composition according to the present invention had 70 %vol wood shavings and 30 %vol sphagnum (with pH about 5), whereas the conventional

poultry bedding was essentially based on wood chips. It has been speculated by the inventors why the present composition gives to an unexpectedly efficient removal of the ammonia than is normally observed with conventional poultry bedding. It appears that the size of the wood shavings in conjunction with the sphagnum constituents renders the bedding very spongy or aery and provides a large surface area of sphagnum that can absorb the ammonia. In any event it is very unexpected that such simple means results in an significant reduction in foot burns.

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**CLAIMS**

1. A composition for use as poultry bedding, said composition comprising:  
wood shavings obtained from pine or fir wood, said shavings having sizes within a range from 1-50 mm; and  
sphagnum;  
wherein the ratio of wood shavings and sphagnum ranges from 30 / 70 % vol/vol to 80 / 20 % vol/vol, and wherein the composition has a bulk density of 100 to 250 kg/m<sup>3</sup>, in its non-compacted state.
2. Composition according to claim 1, wherein the wood shavings have sizes within a range of 5-20 mm.
3. Composition according to claim 1 or 2 wherein the composition has a bulk density of 130 to 200 kg/m<sup>3</sup>, in its non-compacted state.
4. Composition of any one of claims 1 to 3, wherein the ratio of wood shavings and sphagnum ranges from 30 / 70 % vol/vol to 70 / 30 % vol/vol.
5. A method of reducing ammonia levels in a poultry barn comprising the step of applying on the floor 4-12 litres per m<sup>2</sup> of a composition according to any one of claims 1 to 4.
6. Method according to claim 5, wherein 4-8 litres per m<sup>2</sup> of the composition is applied.
7. Method according to claim 5 or 6, wherein the composition is applied after the barn has been warmed to at least 30 degrees Celsius.
8. Method according to claim 7, wherein the barn has been warmed to 34-35 degrees Celsius.



9. A composition as defined in any one of claims 1 to 4 for use in treatment, either curatively or preventively, of foot burn of poultry.



Figure 1

