

# Diagnosis and Treatment on “Weak and Limp Disease” of Rabbit

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**Abstract:** The paper describes a kind of disease called “weak and limp disease”. The disease spreads among the rabbit farms in Hebei Province of China and its around area and its main characteristics are weak and limp all over. The infected subject is mainly lactated female rabbits. Most cases present acute disease characteristics as followed: appetite decreased rapidly or even failed totally, sometimes walk haltingly & trembling, even sometimes rush forward till fell down, then afterwards the ill rabbits got fainted & became weak and limp like a dump mud, its head can not lift up, its mouth & nose is moist & touch the ground, usually its eyes opened wide. Most cases mainly focus on lactation breeder female rabbits. As the conclusion, the cause of this disease was mouldy feed poisoning. [The Journal of American Science. 2005;1(1):91-94].

**Key words:** rabbit, weak and limp disease, diet, mould poisoning.

## 1. Introduction

Since the last ten days of June of 2000, Some disease called “weak and limp disease” spread among the rabbits (especially breast-feeding mother-rabbits) in Hebei Province and its around area, within 50 days, from early July to Mid of August, the author dealt with 26 cases and found that cause was epiphyte (in the diet) poisoning. The details were reported as follows.

### 1.1 Clinical Symptom

Most cases presents as acute disease characteristics, the diseased rabbits appetite decreased rapidly or even failed totally, excrement abnormal, sometimes constipation, sometimes diarrhoea, some times its excrement speckled with the mucus; sometimes walk haltingly & trembling, even sometimes rush forward till fell down, then afterwards the ill rabbits got fainted & became weak and limp like a dump mud, its head can not lift up, its mouth & nose moistured & touch the ground, usually its eyes opened & as if stared at something. Some earlap or Subcutaneous hemorrhage, ill rabbits temperature usually higher and breathe rapidly heart pump quickly & arrhythmia, usually gradually died after 2-4 days, some rabbits four limbs rowed and move, some rabbits struggled before death.

### 1.2 Pathology Dissection

The ill rabbit’s liver intumescent, fragile and easily to be broken, many parts indicates necrosis brownly, the gallbladder ballooning; the kidney has many dots of necrosis, necrosis dots appeared of thimble in the rough hole, some necrosis in slightly yellow color. Most abdominal cavities and thoraxes accumulate the liquid, bladder accumulates the urine, the urine is tea brown or slightly red color and not clear, also most pericardiums accumulate liquid, cardiac muscle bleed, you will find bleed dots on lung, Most case lung presents the white yellow or millet size or some bigger tubercles, which are usually elasticity & soft. trachea ring and larynx extravasated blood or bleeding; intestines and stomach come off by mucous membrane, stomach and intestines have bleed spots. The brain may also have pathological changes, but we did not cut it open to examine it .

## 2. Investigation and Diagnosis

### 2.1 Time & region distribution

All the cases which author investigated were spreaded among: Henan Provice: 4 cases; Shanxi Province: 1 case; Shandong Province: 2 cases; Beijing: 3 cases; Hebei Province: 16 cases. Time

period: July 10 --- August 10, while it was also high temperature, high moisture & heavy rainy season in those area.

## **2.2 Suffered Rabbits age & physiology stages**

Among all 26 rabbit farms total stock number (discluding lactated juvenile rabbits) was 16722, among which were 4674 breeder female rabbits, 689 breeder male rabbits, the number of brood stock young rabbits was 1704, young rabbits 9655; ill rabbit were 512 (breeder female rabbits 393 and 8.41% of total livestock same age stages, male rabbits 34 and 0.93% of total livestock of same age stages), brood stock young rabbits were 2-0.12% of total livestock of same age stages, juvenile rabbits were 83-0.89% of total livestock of same age stages. From above figure you can easily find out ill breeder female rabbits covered 16.72% and pregnant female rabbits 6.05% of total livestock, as a conclusion: most cases mainly focus on lactation breeder female rabbits.

## **2.3 Locations of the rabbit cages**

Though farm sizes are different on 26 rabbit fields, technology of raise also different, some are outside of the room, some are inside, some are three-dimensional cage, while some are only one layers of cages. But, disease rabbits distributions on different locations were no any regularity, namely illness coming on and have nothing to do with position of rabbits cage, totally contingency, So, the possibility of spread the disease among neighborhood cases were easily eliminated.

## **2.4 Drug usage & results**

All ill rabbit have used drug/medicine on therapy, like the penicillin, streptomycin, chloramphenicol, gentamicin, Sulfa drugs, Ciprofloxacin, Enrofloxacin and Moroxydine, but almost none positive effect basically, while mainline was helpful to better the symptom.

## **2.5 Check & investigation on feeds**

We investigated and checked the feeds from 9 rabbits farms, all feeds were formulated similarly, nutrition balance were good, and ingredients also within acceptable range, but when we investigated on feeds raw materials which were also used to feed rabbits directly or indirectly, we found out there were serious quality problem on peanuts hull powder,

vines, soy-bean seedlings powders, and sweet potato vines powders etc. All were mouldy bad smell, even we found 2 rabbits their wheat bran has big lumps, even moldy feeds were found out in evidence in feeding tray among 3 farms. 2 farms use mouldy pellets formula feeds to feed the rabbits, and when we examined the feeds samples under microscope, we found out much mycosis mycelium & sporule.

From all data of pathogeny research, how its spread, clinic symptom & pathological anatomization, which we got, we concluded the cause of this disease was mouldy feeds poisoning

## **3. Measurements and Results**

Stop feeding mouldy feeds to ill rabbits and use fresh fodder, provide drinking water for the ill rabbits for more than 5 days continually, in which added vitamin premix (1.5 times of instruction), also feed some juicy succulence; mainline glucose (10%) 20-40 ml on ill rabbits ear, also feed them Vc 3-5 ml for 3 days which twice a day.

Through above mentioned treatments, the situation bettered & disease was under control among all rabbit fields.

## **3.1 Analysis and Discussion**

The fungi is a kind of organisms that have real cell nucleus, the spore emerges and not include the chlorophyll, Drawing nutrition by way of parasitic and saprophytic, etc, only a few type are unicellular, most others are mycelium, carry on zoogamy and (or) vegetative propagation, with cellulose (or other glucose) and cell walls. It is a big group of microorganism, it is estimated that fungi recorded are more than 100,000 kinds in the whole world. Most fungi are helpful to the mankind, they are widely used in modern industry, agriculture and medicine production. Especially in the production of antibiotic, the production of the hormone, production of vitamin, etc., In addition, some fungi contain the cancer-resisting substance. However, some fungi are harmful to the mankind. It is reported that there are 278 kinds of pathogenic fungi, which do harm to people. According to the affection difference between tissues and organs, generally, the fungi are divide into two groups, the shallow affection fungi and deep affection fungi, The former mainly consist of moss fungus mycology, little spore mycology, epidermis moss fungus. Invading the genuine leather beyond the epidermis, mucous membrane and

viscera organize the fungi of the organ. Referred to as the deep affection fungi, including *Cryptococcus*, *Candida*, *Coccidioides*, *Histoplasma*, *Sporothrix*, *Fonsecase*, *Rhinosporidium*, *Aspergillus* and *Mucor* thick liquid mushroom of afterbirth, the silk mushroom of spore, Colouring the fungi, the spore mushroom of nose, aspergillus and mao are mould. Research indicates that a few fungi cause the grain, food, The fodder will produce a kind of poisonous secondary metabolite after mouldy ---fungi and toxin. The fungi and toxin are organic compound with living beings activation of the little molecular weight mainly, usually depend on its damage position to the animal, divides it for the liver toxin, kidney toxin, nerve toxin, five kinds, such as reproduction toxin and other toxin, etc. Up till now, we have already known that there are different fungi and toxin of more than 100 kinds of chemical constitution, some toxin among them has carcinogenic function. According to the clinical symptom, the microscope is watched and analyses, this poisoning is to cause by many kinds of toxin that the master produce many kinds of fungi with the mould.

### **3.2 Happen time**

According to the author practical experience of rabbit raising, rabbit mould and toxin have been poisoned and happens throughout the year. It concentrates on every year summer, which is high wet and temperature season, secondly spring. High humidity and suitable temperatures is essential condition for fungi or mould breed. Generally speaking, in 30 degrees Centigrade, relative humidity more than 80%. The moisture content of grain and forage grass has the tolerance highest in 14% yellow aspergillus. Almost all the grain, forage grass, the fodder can become the host of the yellow aspergillus. Each a kilogram of fodders contain 1 mg. of yellow aspergillus toxins, make beasts and birds death. The situation of concentrating on having illness coming on in 2000 is rare in history. Its reason is two mainly: First, the weather reason of summer of this year. According to observation, only from July to the first ten days of August, in the middle part of Hebei and Beijing area, the weather overcast and rainy accounts for over half. Tall and wet in summer, give the reproductions of mould offer the terms; Second, the transition which raises the rabbit way. Raise rabbit with coming loose and

raise, raise little scale and rely mainly on dark green fodder more in the past, Raise and feed and cooperate with less material. Raise rabbit expand generally and raise and feed full price account for the more than 70% of total amount by mixed feed by scale at present. The main reason having illness coming on in spring is that the forage grass that is stored in autumn and winter is attacked by the sleet.

### **4. Clinical symptom and toxin kind**

According to the author observation, its clinical symptom can divide into several following types on the whole : The tinea type of the cover, enteritis type, stomatitis type, miscarrying type, the type that paralyses hind leg is weak and limp with the types, such as septicaemia, etc. Except that the tinea type of the cover is shallow department fungi and disease, other types are deep department fungi and disease. The variety of its clinical symptom depends on the kind of the toxin , poisonous substance quantity, the poisonous substance invades physique of position and animal, etc. Only aspergillus belong to by mould but speech, have and each change 18 a piece of each group, and among them little to can cause people and animals to be ill partly, Such as the cigarette aspergillus, yellow aspergillus, black aspergillus, Soil and aspergillus, construct the aspergillus of the nest and construct spore's fungus of naked shell of nest, excellent aspergillus, Variegated aspergillus, rice aspergillus, the dust and green aspergillus, Gathering the aspergillus more, bright aspergillus, Japanese aspergillus, The aspergillus of Amsterdam, burnt aspergillus, limitation aspergillus, Yellow handle aspergilluses with educating aspergillus, etc. Different aspergillus produces different toxin , and different toxin causes different organ injury of organization and different clinical symptoms appear . It is reported , cigarette aspergillus and yellow aspergillus can cause aspergillus mildew of lung and septicaemia etc., to be infected all over. Black aspergilluses construct nest cause lung aspergillus ball by aspergillus, etc. Excellent aspergillus, it can cause the bronchus aspergillus mildew of parasitics to construct spore's fungus of naked shell of nest; Other aspergillus can cause the ear, the eyes, the infection of a pair of nasal sinus . Of aspergillus mildews, infect for single aspergilluses and amalgamate and infect for two a kind of aspergilluses. Serious case relatively, often has

been at bacterium, virus and other fungal infection.

#### 4.1 Diagnose the main point

The diagnosis all over that the mould and toxin of the weak and limp type are poisoned is relatively easy, the main point is: Have illness coming on time rely mainly on high wet summer of high temperature, in order to adopting most heavy appetite is relatively weak to secrete rabbit at main targets wet nurse physique, Not infective; With the four limbs paralysis, it is the main characteristic to be weak and limp all over, there is not result in various kinds of drug therapy which resist bacterium and antivirus. Pathology analyzes the main change: The liver and kidney are swelling, there are many places that necrosis in the kitchen ; Abdominal cavity, thorax and pericardium accumulate the liquid , the bladder is accumulated muddy , Present the urine of the dark brown or light red; Cardiac muscle, dirty to have and bleed some lung, it is yellow and white for lung to appear, Millet granular or relatively big small tubercle ; Intestines and stomach come off and have and bleed spot or bleed one by mucous membrane.

#### 4.2 Prevent and measure

Rigorously enforce fodder management does not buy and use the mouldy rotten fodder definitely. The fodder must be stored correctly. Some kinds of fodder ,such as peanut vines, peanut shell and wheat bran etc., which was apt to be mouldily, must be managed strictly .

Mouldy may take place in fodder air and shine, store, processing fodder, which link is ignored , often apt to go wrong to transport and raise each link fed. For example, it is too many to have the clear trough in time to feed in raw material in proper order, a lot of accumulation makes the fodder moisture in the feeding trough, especially drink the water and leak systematically or other reasons lead to the fact that the fodder in the material trough is mouldy and lead to the rabbit ill .

At high temperatures and wet seasons, mould inhibitor (such as propronate, calcium propronate, potassium propronate, ammonium propronate must added to the rabbit diet. Quantity: propronate 500~4000 mg×s/kilograms of fodder, calcium propronate and sodium propronate (650 ~ 5000 mg/kilograms of fodder). There is the sorbic acid (0.5%~0.15%) and salt type (potassiums sorbate, sodium sorbate and calcium sorbate (0.05%~0.3%),

benzoic acid (interpolations quantity 0.05%~0.1%) with benzoic acid sodium (add it measure 0.1%~0.3%), formic acids and salt type (formic acid sodium, formic acid calcium, Quantity is generally 0.9%~1.5%), to the hydroxyl type of ester of benzoic acid, citric acid, citric acid sodium, the lactic acid, the calcium lactate, Lactic acid inferior irons, etc. There are better dyke mould results .

For ill rabbits, method of support, protects, detoxify can be taken. Supporting treatment is 25% of the glucose of intravenous injection and 20~40 milliliters, two times a day, until fully recover. Take 10% of the 50~60 milliliters of syrup too. At adds 0 in hypodermic injection. 5~1 milliliters, in order to strengthen the heart function; It is available to protect and let out the poison: 20 grams of starch, add water to boil into the pastel, add sulphuric acid 5~6 grams of sodium and irritate clothes, In order to protect the mucous membrane of intestines, the absorption and increase which reduce the poisonous substance are discharged; Detoxify and generally inject the ascorbic acid, cooperate with certain hepatagogue. Restraining the fungus can throw something and feed certain mould sensible medicine (such as the nystatin), if the medicine was fed and the mouldy diet was stopped, the ill can fully recover quickly.

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#### References

- [1] WAN-QING LIAO. The fungi and its disease. People's Health Press. Beijing, China. 1989.
- [2] RONG-ZHEN ZHANG. Livestock pathology. Agricultural Press. Beijing, China. 1981.
- [3] DA-QI HUANG. Feed handbook. Sci and Tech Press. Beijing, China. 1984.
- [4] DAI-WEN CHEN. Feed additives. Sci and Tech Press of Sichuan. Chengdu, China. 1997.
- [5] ZI-LIN GU. Investigation and treatment on rabbit mould, Journal of Economic Animal 1999;3:1~4.
- [6] ZI-LIN GU. The meat rabbit raises technology. Chinese Agriculture Press. Beijing, China. 2000.