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ASPECTS REGARDING FUNGI INCIDENCE IN FIBROUS AND SILAGE FODDER

ASPECTE PRIVIND INCIDENŢA CIUPERCILOR ÎN FURAJELE FIBROASE ŞI ÎN CELE ÎNSILOZATE

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The quantitative and qualitative mycological assements in roughages and silo feeds display a tight corelation betwen the organoleptic characteres and the number of fungi per gram of feed, thus, Lays and high quality silage, or medium quality silage, contain below 8x10 5 fungi/g feed in contrast with the inferior ones in wich the mycotic load7g, feed excudes several times, the above mentioned value.
The ubiguitous presence of Aspergillus, penicillium, mucor, Stachybotzra and fusarium in hays and silage stands Witress for their pathogenic potentiality.In order to prevent the spead of mycoses and mycotoxicoses, several precaution measures are to be taken; thus it is recommmendable that low quality folder with strong organoleptic alteration, with over 8x10 5 fungi/g feed be ousted from the nutrition of pregnant females, in lactation or young nuffering from chromic diseases. These feeds are to be administread restrictively and in mixture with good quality feed, for the other categories of animals.
Keywords*:* fungi, fibrous, silage fodder

Introduction

An important role in farm animal nutrition is represented by fodder quality, such productions as also reproduction.

Intoxications with mould fodder in farm animals are more frequent, in last time being determined by fungi of Aspergillus, Fusarium, Penicillium, Mucor genus, which usually spontaneous infest, fibrous or silage fodder (1, 3, 6, 9, 10, 11). Mycotoxicosis in animals is manifested principally by non-realizing of planning productions and unleashing of some digestible troubles , expressed frequently by diarhoea followed sometimes by constipation.(1, 2, 3).

In the above context, we have proposed us to follow the infestation degree with fungi in fibrous and silage fodder, in more farms from Cluj county.

Material and Methods

It were examined a number of 45 samples of fibrous and silage fodder, coming from zoo-technical units in Cluj county, classified after organoleptic

properties in: very good fodder, good and inferior; for each category of fibrous and silage there are 15 samples.

Quatitative mycologic exam was done by insemination on Sabouraud medium with oxytetracycline in Petri plates , by 1 ml from a decimal dilution series; prepared with the help of electromagnetic agitator for obtaining a more much homogenous dilution (3).

Incubation was realized in first day at the temperature of 30 – 37^{0}C, and then, in following days at 22 – 25^{0}C. Reading of results was done at 2 – 3 days in levuriformes fungi and at 7 – 10 days in mycelian fungi (4, 5, 7, 8, 10).

Obtained data were expressed grouped in levuriformes fungi, mycelian fungi and total number of fungi per gram fungi.

Results and Discussion

Results obtained as a following of quantitative mycologic exam done in fibrous fodder (hay) are shown in table 1. So, in hay with organoleptic caracters very good, of light green colour, with aromatic smell, humidity under 15% etc., has varied as follows: in that mycelian between 0 – 540 fungi / g fodder, with an average of 320 mycelian fungi / g fodder; in that levuric between 0 – 200 fungi / g fodder with an average of 100 fungi / g fodder; in total number of fungi, values of averages are between 120 – 2600 fungi / 1 g fodder, with a general average of 510 fungi / g fodder.

Table 1.

Values of mycologic indexes in fibrous fodder

Specification	Fungi g/fodder			
		Mycelian	Levures	Total
Hay of very good quality	limits	0 – 5,4 x 10^2	0 – 2,0 x 10^2	1,2 x 10^2 - 2,5 x 10^3
	average	3,2 x 10^2	1,0 x 10^2	5,1 x 10^2
Hay of mean quality	limits	1,3 x 10^4–1,2 x 10^6	5 x 10^3 –3 x 10^4	8,6 x 10^4 – 1,2 x10^6
	average	4,4 x 10^5	7 x 10^5	4,5 x 10^5
Hay of inferior quality	limits	6,5 x 10^5–3,7 x 10^5	2x10^5–4,6 x 10^4	8,4 x 10^4 – 2,4 x10^6
	average	8,5 x 10^5	1,6 x 10^4	8,7 x 10^5

Fibrous of good quality had the following mycologic charge : mycelian fungi values are between 13000 – 1200000 g / fodder, with an average of 440000 / g fodder; levure fungi values have varied between 5000 – 30000 g / fodder, with an average of 7000 / g fodder, and in total number of fungi / g fodder, average values vary between 85000 – 1200000 fungi g / fodder, with a general average of 450000 fungi / g fodder.

Content of fungi / g fibrous of inferior quality has varied in mycelian formes between 64000 – 2400000 fungi / g fodder with an average of 250000 fungi / g fodder; in levures between 2000 – 45000 fungi / g fodder, with an average of 16000 fungi / g fodder; in total number of fungi / g fodder, average variation is

between 34000 – 2400000 fungi / g fodder, with a general average of 870000 / g fodder.

Silages of very good quality, were infested only with mycelian fungi (table 2.), which have pendulated between 6500 – 370000 fungi / g fodder with a total average of 360000 fungi / g silage.

Silages of mean value were infested such with mycelian fungi (700000 – 1400000 mycelium / g fodder) with an average of 1200000 / g silage, as also with levure fungi (130 – 6000 fungi / g silage) with an average of 2000 levures / g silage, having in total number of fungi / g silage, averages between 91000 / 1400000 fungi / g silage with a general average of 1200000 fungi / g silage.

Table 2.

Values of mycologic indexes in silage fodder

Specification	Fungi g/fodder			
		Mycelian	Levures	Total
Silage of good quality	limits	$6,5 \times 10^3$–$3,7 \times 10^5$	-	$6,5 \times 10^3$–$3,7 \times 10^5$
	average	$3,6 \times 10^5$	$1,3 \times 10^2 – 6 \times 10^3$	$9,1 \times 10^5$–$1,4 \times 10^6$
Silage of mean quality	limits	$7 \times 10^5 – 1,4 \times 10^6$	$1,3 \times 10^2 – 6 \times 10^3$	$9,1 \times 10^5 1,4 \times 10^6$
	average	$1,6 \times 10^6$	$2,0 \times 10^5$	$1,2 \times 10^6$
Silage of inferior quality	limits	$1,7 \times 10^4$ –$4,4 \times 10^6$	$1,2 \times 10^4$–$1,2 \times 10^5$	$2,9 \times 10^5$–$4,5 \times 10^6$
	average	$2,0 \times 10^6$	$4,5 \times 10^4$	$2,5 \times 10^6$

In inferior quality silage fungi number / g fodder has varied : in those mycelian between 17000 – 4400000 fungi / g silage, with an average of 1200000 / g silage; in those levuriformes between 12000 – 120000 fungi / g fodder with an average of 45000 fungi / g fodder, and in total fungi / g silage, averages have varied between 29000 – 4500000 fungi / g silage, with a general average of 2500000 fungi / g silage.

Mycologic qualitative exam puts in evidence most frequently the presence of fungi from Penicillium, Aspergillus, Fusarium, Mucor, Alternaria, Stachybotris genus and less from other genus. Fungi incidence in the above named genus, differ from one category of fodder to an other, being observed sometime the presence of some genus near in pure culture. So, in hays it is ascertained the dominance of fungi from Aspergillus and Mucor genus, and in silage fodder the preponderant presence of fungi from Penicillium genus.

By determinations which were done it is appreciated that mycotic charge of hays and silage fodder is peculiar great, mostly in those of inferior and mean quality (300000 fungi / g hay and 100000 fungi / g silage), surpassing much the values admitted by our legislation in vigour, in combined fodder of 300000 fungi / g fodder.

For the establishment of fungi / g fibrous and silage, we consider that it must be undertaken in this sense much more researches, which finally will permit the establishment of values admitted in consumption.

Based on first data obtained, we recommend admission into consumption of fibrous and silages with an average charge of till 800000 fungi / g fodder.

Concerning fodder of inferior quality, which have organoleptic characters much modified, and number of fungi / g fodder surpasses reminded values, will be not admitted for consumption in pregnant females and in lactation and also in young live stock and animals with chronic diseases, in which will be administred restrictively in to mixtures with good quality fudder.

Conclusions

1. It is ascertained a correlation between organoleptic characters and total number of fungi / g fodder. So, hays and silages of very good quality and good quality, contain a number of fungi lower than 800000 / g fodder facing to those with inferior organoleptic qualities, in which mycotic charge / g fodder surpass the mentioned values.

2. Data which were obtained by qualitative determinations put in evidence that mycotic infestation of fibrous and silage fodder is dominanted by mycelian fungi of Aspergillus, Penicillium and Mucor genus.

3. Inferior quality fodder, with organoleptic characters modified , having a grat number of fungi / g product, is recommended not to be admitted in pregnant females alimentation, in those in lactation and in animals with chronic diseases with low resistance of organismus. To the other categories of animal they will be administrated with restrictions in mixtures with good quality fodder.

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