OPTIMALIZATION OF CLASSIC HORSE STABLE IN SOUTH SILESIA

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Introduction

The good quality of animal housing is the main parameter that have a great influence on health and productivity of animals. This is the reason why every owner want to create the optimal conditions for his herd. Especially microclimate in building for animals have a huge significance to reach good effects In work with animals. Optimal parameters in animal building gives as opportunity to have healthy heard and staff.

Material and Methods

Examinations were carried out In the classic horse stables In south Silesia. Examination were carried out in two horse stables thoroughbred riding horses..

	Specification of stable 1.	Specification of stable 2
Length	: inside- 79m outside-81m	Length: inside- 13,0m outside-14,8m
width: inside	-12,7m outside-14m	10,0m
height:	3,8m	3,9
corridor width	: 4,5m	: 2,0m
boxes	3,8m*4,5m	4,1m * 3,55m
internal area	900 m^2	118,75m^2.

Estimation of microclimate parameters was carried out in both stables in early spring. Every three weeks three times a day all microclimate parameters were noticed.

During our examination we checked parameters as follow: temperature, humidity, air movement, dust level, lightning system.

Results and discussion

The results of those examination are shown in tables

Tab.1. Temperature in examined stables(oC)

	Outside building	Inside stable nr1.			Inside stable nr2.		
		average	maximum	minimum	average	maximum	Minimum
I	16,5	18,3	18,5	17,8	16,3	16,5	16,0
II	19,9	20,2	21,3	18,8	19,5	20,1	18,9
III	18,0	19,3	19,6	19,1	19,6	19,1	19,3

Due to our regulations the temperature inside building should vary between 5-28ºC.In both stables the temperature varied between normative temperatures, deepened on outside temperature.

Tab.2. Humidity in examined stables (%)

	Outside building			Inside stable nr1.			Inside stable nr2.		
	max	min	avg	Max	Min	avg	Max	Min	Avg
I	88,1	57,3	74,4	79,7	67,2	74,5	82		77,9
II	63,0	58,2	65,3	67,6	49,7	56,6		47,5	56,6
III	81,5	53,6	65,3	80,0	49,7	59,3	82,5		73,6

Tab.3.Air movement In examined stables (m/s)

	Outside building	Inside stable nr1.	Inside stable nr2.
I	1,3	0,04	0.0
II	1,1	0.06	0,0
III	0,086	0,0	0,04

After analysis of estimated parameters and all results we can conclude that both stables hale to low level of Exchange of air. Probably the reason is absent of ventilation systems. To Exchange of the air In both stables owner use Windows and main doors.

This state is very dangerous In point of view especially dust and harmful Gases

Tab.4. Lightning system in examined stables (lux)

	Inside stable nr1.		Inside stable nr2.		Outside building
	Max.	Min.	Max.	Min.	
I	180	12,5	94	6,3	833
II	150	21,5	39		1460
III	12	8	12		83

Windows in both buildings are cleaned every week, and walls are painted with white paint every spring. The relation between Windows and floor looks like 1:32.

In stable Nr 2 the relation is windows and floor is 1:25. That is the reason of lower level of this parameter.

Tab.5. Dust level in both examinated stables

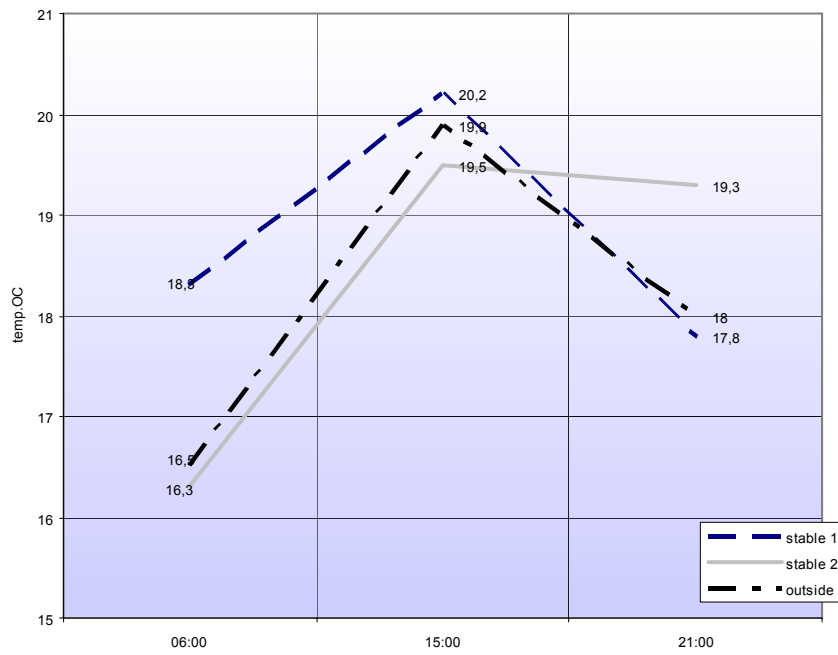|	Inside stable nr1.	Inside stable nr2.
I	283	306
II	213 (max.410)	243 (max.450)
III	103	125

Fig 1. Comparison between temperature In both stables during examination time
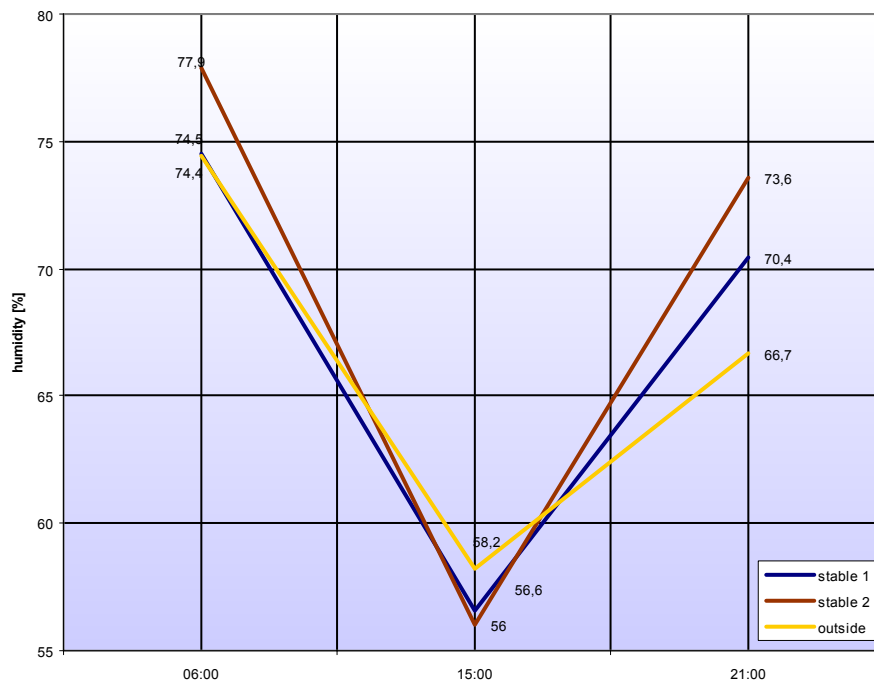
Fig 2. Comparison between humidity In both stables during examination time.

The highest level of dust were estimate In stable Nr 1 in the middle of a day an was 410 dust molecules wat was result of removing the straw from stable floors. The cubature ave big influence on results of yhis estimation. But even in such a huge cubature the level of dust molecules were high during feeding and removing litter an straw.

Max. level of dust estimated in our examination were 450 molecules, during cleaning processes and removing of litter.

Conclusion

To reassume all data and result it must be said that In stable Nr 1 he ventilation system were Works on to low level, what had influence on dusting and humidity inside his building.

Stable Nr 1 is Better than Nr 2 and horse hale higher level f welfare in it.

References

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