

## **Safety in the Equestrian Compartment**

Checchi A.<sup>1</sup>, Casazza S.<sup>2</sup>, Denti M.<sup>3</sup>, Pisanu M.<sup>3</sup>

<sup>1</sup>*Dept. of Agricultural Economics and Engineering - University of Bologna*  
*email: antonio.cecchi@unibo.it*

<sup>2</sup>*Studio Casazza & Associati – Brugherio (MB) – Advisors for Safety and Health in Working Contest - email: serenella@studiocasazza.it*

<sup>3</sup>*Engineering Dep. of Territory, Construction and Infrastructure Section. Faculty of Agriculture - University of Sassari - email denti@uniss.it*

**Keywords:** horses, safeness, equestrian environments

### **Objectives**

The evaluation of risks in the equestrian compartment, both in trot and canter racecourses than in simple equestrian schools, contains in itself a notable complexity that doesn't make the assignment simple neither for the employer than for the advisor that doesn't own a specific formation in equestrian subject. Procedures are poorly standardized and conditioned very much by the variability of the implicated subjects, both in animal and human terms. The great difference among the environments and the conditions in which involved people operate, as well as the subjective differences of single horses also in terms of reactions to the specific context, makes it difficult to generalize the applications in safety terms, being however on the other hand forced to compile all-round valid guidelines. The innovations introduced by the D.Lgs. 81/08 focus the attention on some characteristic elements of working compartments, such as the precariousness of the job, the appeal to poorly specialized and foreigner manpower, the difficulty to introduce in consolidated practices new management procedures that would produce an effective reduction of risk and stress, the difficulty of communication with the always greater number of foreign workers.

### **Methods**

#### **Practical application of the D.Lgs. 81/2008**

##### **The Evaluation of Risks**

The entrepreneur's choice, that from now on we will call Employer (D.L.), to adjust his own stable to the normative in safety terms has an inderogabile forced departure: the evaluation of the risks. This must unwind according to different formality in relationship to the dimension of the firm, essentially determined by the number of employees.

The evaluation of risks must be done on the base of specific technical norms and keeping in mind that the risk is calculated through the formula:

$$\text{risk} = \text{probability} \times \text{magnitudo}$$

that is the measure of the entity of the esteemed damage compared to the probability that this happens.

First of all it is necessary to identify the sources of risks, then individualize and subsequently esteem the risks of exposure so to classify the entity of the risk (irrelevant – acceptable – low – medium - high). On the base of this classification, the employer, together with the other figures involved in the management of the business safety, will therefore undertake the necessary actions to reduce or eliminate the esteemed risks at the source, also through a programmed prevention.

The experiences matured while appraising the risks in different firms specialized in breeding, in athletic and competitive preparation and even just in the daily management of horses, have brought to program the phases of individualization of the risks contextually to the analysis of the environments, of the fittings and of the machineries, of all products used, both in alimentary terms and for disinfecting or cleaning environments, followed by phases of improving interventions both in the general context and in operational manualities, without neglecting the conditions of horses' comfort which will greatly influence the sphere of physical risk from contact with the horse himself.

Not indifferent difficulties are met then in the projectual and ergonomic coordination: that is the creation of a correct match between projectual-building solutions and physical and psychological demands of the binomial worker-horse, especially in old dated constructions, readapted to an equestrian use.

### **Prevention and Protection Service**

An important objective of the employer (D.L.) is to create a team, technically called Prevention and Protection Service, that will help him, side by side, in a not simple task, for which he will probably do not have a suitable preparation.

With this Service and it's Responsible Chief (RSPP), that can be the D.L., a worker or an external Advisor, with the aid of a figure named among the workers themselves, the Workers' Representative for Safety (RLS) and with the Competent Physician, he will work in the individualization of the greatest number of tools of prevention and protection, on a careful visual signaling of devoted runs and reserved access areas, individualized by descriptive posters that report, in a clear way, the obligations and the prohibitions, as well as on an encoded procedure of control of risks and above all of working procedures. Other very important chapter is a solid formulation related to the management of the emergencies, with an increasing attention devoted to the formation and information of the personnel with the most simple and comprehensible methodics possible.

A specific assignment of the Competent Physician will be to foresee and perform all the visits and diagnostic examinations held necessary, emerged by the classification of the risk performed in the moment of their analysis, with specific attention to biological, chemical, noise and vibration risk.

### **Specific risks**

The concept of risk is used to quantify safety of every human working activity. This concept derives by the economy of insurance companies, in whose context was given, for the first time in the XVIII century, the following definition:

$$\mathbf{R = PD \times D}$$

in which:

**R** = Risk

**D** = Damage entity

**PD** = Probability that the damage is verified

Usually a determined activity doesn't involve only one danger (entity D) but a whole range of possible damages according to the environmental circumstances, to the intervention or less of protective and safety systems, to the intervention or less of expert people who are able to influence the evolution of the accident.

Having quantified the safety of a human activity with the aforesaid relationship, it is evident how the risk can be reduced reducing at least one of the two factors.

The first factor **PD** can be reduced increasing the preventive measures proper to limit the probability that an event will happen (information, formation, advising posters, machine safety systems, etc.).

The second factor **D** can be reduced increasing protective measures: among these the collective type must be preferred in comparison to the individual ones: for example a rotation of the employees in a noisy activity rather than the use of ear-protections; the use of less toxic chemical products rather than the use of masks and gloves and so on.

It must be underlined however that, also adopting the most sophisticated techniques to effect equipments protection and well programmed organizational measures, it is not possible to bring the system to risk "zero" that is to a total absence of danger. To minimize such **residual risk**, the formation of workers employed assumes a fundamental importance.

Among all the computable risks in the evaluation of the man-horse sphere, some emerge in great relief in comparison to others and must be treated with greater detail accordingly to underline better their peculiarities.

We are going to list them in decreasing order of incidence in our sector:

- Physical risk from contact with the horse
- Biological risk
- Different physical risks (noise, vibrations, external temperatures, manual movement of heavy loads)
- Chemical risk
- Electric and Fire risk
- Mechanical risk

The first two types of risk are specific and characteristic of this compartment, while the following ones, also not losing importance because of their more general nature, are verifiable also in the greatest part of other working compartments. For this motive, in this study, we will analyze only the first two.

- **Physical risk from contact with the horse**

Among those people who operate with horses, many, unfortunately however not all, know that their behavior is finalized to the search of pleasant sensations or to avoid pain and suffering, that can also be individuated in impatience. Nevertheless the effect that the instinct has on the perception of such feelings isn't always considered: the stress provoked by frustration of instincts can sometimes reveal itself worse of the pain itself for a horse. Stress condition is of such importance in horses that its presence is also noticed by the increase of blood levels of cortisol and catecholamine. Accordingly an important equestrian safety parameter consists in understanding the instincts of the horse and acting so to create him the less possible emotional conflicts. Forcing a horse to do something with strength means to sensitively increase its emotional stress up to make it react in an unpredictable and dangerous way.

Such premise wants to bring to the indication of the most frequent, harmful and investigated of the physical agents: the aggressive action of the horse, that is manifested with kicks, bites and crushing with limbs or the whole body.

Then we must necessarily add the traumas not consequential to a specific reaction of the horse, that means the falls during the sporting activity. These should be divided in accidental and unpredictable accidents, not originated from the willing of the horse, and accidents that draw origin from a reaction of the horse to a negative action of the rider. But here we should

analyze the validity of instructors' equestrian formation and what they are able to transmit to their students: we would surely touch aching keys that are not specific of this study.

The equestrian accidents, even if poorly investigated in Italy being partly gathered in the sector of agriculture and in the greatest part passed under silence for the strong percentage of irregular workers in this sector, on the base of more detailed studies conducted by foreign universities, constitute a serious sanitary problem, still underestimated, that deserves a well conceived assignment of prevention in every category of workers involved, underlining the importance, to the preventive goals, of the formation of workers to sensitize to a correct perception of risk, to the use of personnel protection devices and the use of correct procedures.

- **Biological Risk**

The biological risk for human health is connected with the exposure to organisms and microorganisms both pathogenic or not, animal and human endoparasites, that can be present in the working environment.

The biological agent is any microorganism, even if genetically modified, animal or human ecto - or endoparasites able to provoke infections, allergies or poisonings: basing on the D.Lgs. 81/2008, all biological agents are listed in classes according to the degree of dangerousness.

The biological risk consists, on one side, in the danger that an illness of the horse can be transmitted to humans, producing in them an analogous pathology for etiological agent and often also for symptomatology: in such cases we about zoonosis. On the other side, a different risk consists in the onset of a pathology, of an illness, or of a sanitary problem instigated by polluting or allergenic agents proper of the horse and of its vital sphere. In such case we speak about mycosis, hyper sensitization or allergies to mites or to the horses' dandruff rather than to its hair or to the dust usually present in foods and litters.

The evaluation of this type of risk must obligatorily be executed in collaboration with the competent physician that must have a deep knowledge of the illnesses that can strike the horses with which workers have contacts and that can be transmitted to humans, as well as of the relative clinical demonstrations in the man himself. A consolidated and constant synergy must exist between competent physician, RSPP and the veterinarian that knows the state of health of the stable.

## **Results**

This study on safety conditions or, better, on their lack, in the most different equestrian environments, from small barns up to great international fairs, is born from a multiplicity of occasions in which we have observed seriously risky situations, in which the accident sometimes didn't happen, such others unfortunately did and this among a general amazement and surprise, as if clear premonitory symptoms have never existed.

The world of equestrian work in fact has been poorly investigated until now by the point of view of prevention of professional and sanitary risks. We usually see interventions only following accidents or after occasional inspections from vigilance organs. Only in rare happy islands we have found associations of firms (as for instance the many small stables of the gallop of the racecourse of San Siro in Milan) that have faced together, and with a notable reduction of costs, all the aspects of preventing of accidents, drawing a benefit of it in terms of diminution of the number of accidents, both in stable works than during the runs.

It is not clear neither the motive for so much reluctance from the employers in the application of prevention systems in a context with so many risks neither the scarce attention of the competent organs both for a sanitary point of view that for accidents.

The only reasonable explanation for what regards the first ones, is the tendency to invest as less as possible in expenses of which an immediate necessity is not understood; for the seconds perhaps does not exist a facility of such a capillary control as it can happen in other sectors: for example in housebuilding, where every open yard must be signalled in a formal way. If it also subsisted in the equestrian environment the obligation to signal in preventive way, for example, every contest, competition or demonstration, the competent local sanitary firms (ASL) surely could not close their eyes on safety conditions. Or still, if training organizations had an obligation, if wanting to be affiliated to the relative federations, to show the compliance of laws in safety terms, a cut would be given to the negligence from the managers of the structures and to their ignorance of the normative obligations. Again, if facilitations in the economic treatment of the employees were applied to the equestrian structures that apply the normative devices of the D.Lgs 81/08, surely the employers of the sector would gather the occasion not to risk uselessly.

The concept that we desire to make emerge from this analysis is that, for how much undeniable it is that safety has some costs, both in terms of time and money, the lack of safety surely has greater costs.

#### *Bibliografia*

- Casazza M.V. - *Analisi del sistema sicurezza e salute sui luoghi di lavoro attraverso il compendio normativo: un decennio d' applicazione del D.Lgs 626/94* – Adam Smith University of America Italian Branch – Roma 2007
- Codazza D., Nativi D., Brughieri M., Bronzo V. – *Le malattie infettive del cavallo* – Point Veterinarie Italie – Milano 2007
- Della Maggiore R., Di Pede C., Perotto E., Fresco R., Vivaldi L., Sabatini M. – *Monitoraggio dei centri ippici in area di Pisa*
- Geiger F. – *Cavalli: come occuparsene* – Ufficio Federale di Veterinaria Berna CH
- Iba K. et al. – *Horse related injuries in a thoroughbred stabling area in Japan* – Arch Orthop Trauma Surg. 2001
- Petridou E., Kedikoglou S., Belechri M., Ntouvelis E., Dessypris N., Trichopoulos D. – *The mosaic of equestrian-related injuries in Greece* – Dep.Hygiene and Epidemiology, Athens University Medical School – J Trauma 2004
- Serra D. – *La sorveglianza sanitaria dei lavoratori esposti al rischio di zoonosi* – Servizio Prevenzione e Sicurezza negli ambienti di lavoro - Modena
- Watt G.M. et al. – *Preventing equestrian injuries: locking the stable door* – Sports Medicine 1996
- Williams F. et al. - *Horses-related injuries* – Hazard 1995 N°23 Victorian Injury Surveillance System – Monash University Accident Research Center - Melbourne