

Equestrian Riding Surfaces and the Use of Dust Suppressants

Dust is a very real health hazard for most living creatures. Equestrians are concerned with riding arena surfaces, primarily for the comfort, health, and performance of the horse but human health issues absolutely must be addressed. The objective of this survey was to determine type of riding facility used, arena surface composition and dust controls methods used. Twenty percent of the surveyed facilities were dressage/English disciplines and 80% were western/general equestrian facilities. Survey results showed, 40% of facilities had access to an indoor riding arena. Riding surfaces consisted of: 71% sandy soils and fine aggregates, 40% clay soil, 21% wood products, 7% used rubber products and 6% used tan bark (arena treatments were not mutually exclusive). Sands and existing soils were the primary materials that were mixed with other arena surface treatments. Sixty percent of all facilities responding used a dust control product with 86% of the indoor facilities using dust suppression. The primary dust control method was watering (hosing, sprinkling, etc.), 6.6% added chemicals (salts), 6% incorporated soiled bedding/manure and 3.2% used other suppressants (vegetable oil, mineral-based, or petroleum motor oils).

Agricultural dust (livestock, grains and riding arenas) is a serious environmental and health hazard.^{1, 2} Increased awareness of occupational diseases and the development of epidemiological studies have shown that the problems of exposure to dusts is widespread and that many industries are concerned about these risks.¹ Health issues should be addressed when constructing and maintaining riding area surfaces. Despite recent reports of respiratory problems among other agricultural occupations, relatively few studies have been conducted to characterize dust (particles ranging from .001mm to .005mm) exposures in the equestrian environment.^{1, 5, 6}

Materials and Methods

Over 2,500 addresses for equestrian facilities across North American were collected to complete the survey. Survey variables and frequencies were analyzed.

Results and Discussion

Survey results showed that 40% of facilities had access to an indoor riding arena, 78.8% had access to an outdoor riding facility and 1.3% had racetracks. Some of the operations had access to both indoor and outdoor riding facilities. Substantial dust is generated in both indoor and outdoor arenas, during riding and training activities. It is a known scientifically proven fact that dusts generated from these riding surface materials are serious health hazard to horses and humans and is accumulative in the respiratory system². A Colorado State University survey of riding instructors showed **that nearly half of the instructor's (46%) primary riding facility is an indoor arena.**³ The survey also found that instructors and trainers are nearly two times more likely to develop chronic bronchitis. Therefore, it is necessary to understand the types of

surface materials that are being used in riding facilities and the importance of using good, long-term dust suppression methods.

According to this survey, most equestrian facilities operators are concerned about dust control because many equestrian instructors and trainers spend long hours each day in an indoor arena. There are many methods used to control dust; whatever method is used it is necessary to think about the following considerations. Reducing dust is critical by either increasing particle size through aggregation/agglomeration which is accomplished by an adhesive force that binds to particulates larger than soil particles or by increasing particle weight through absorption of low molecular weight, low density suppressants. Dust suppressants used include water, salts, methyl esters of vegetable oil and petroleum, hydrotreated alkanes/alkylates, or mineral-based oils.

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