

# Esposizione a *Saccharopolyspora Rectivirgula* degli allevatori di bestiame bovino della provincia di Reggio Emilia e rischio di alveolite allergica estrinseca (*Farmer's Lung*)

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## KEY WORDS

Allergic extrinsic alveolitis; Farmer's Lung; hay pollution; *saccharopolyspora rectivirgula*, thermophilic actinomycetes

## SUMMARY

**«Exposure of cattle breeders to *Saccharopolyspora Rectivirgula* in the Reggio Emilia Province and risk of *Farmer's Lung*».** Introduction: Nearly 2.350 dairy farms (and 137.000 milk cows) are located in the province of Reggio Emilia, Italy, to produce the famous Parmigiano-Reggiano® cheese. Feeding is hay-based both in the cold season and (together with grazing) in the warm season. This requires a large production of hay and frequent handling by the farmers. Hay is packed in large cylindrical bales, "round bales" (nearly 2.41 m<sup>3</sup>), or, rarely, in traditional small prisms-shaped bales (about 0.15 m<sup>3</sup>), only used on small farms. We estimated there were 6.000-9.000 the workers exposed to hay dust. The risks for the farmer's health due to the hay dust exposure are well known; in particular *Farmer's Lung* disease (FL) is rather frequent in this Region (1.5%-3.0% among people exposed). We studied hay and air pollution by *Saccharopolyspora Rectivirgula* (SR) in relation to these two different hay-packing techniques (hay dried in the open air) both in flat and in hilly areas. Methods: On 56 cattle-farms, hay and air samples were collected and analyzed using a six-stage Andersen sampler and a sedimentation chamber (SC) for hay samples with plastic Petri dishes containing culture medium. Results: Round bales were richer in SR spores than the small prism-shaped bales (n=37, mean=6.20 log<sub>10</sub> ufc/m<sup>3</sup> in SC, ds: 3.87 vs n=15, mean=2.40 log<sub>10</sub> ufc/m<sup>3</sup> in SC; ds: 4.16) and they seem to produce higher air pollution (n=30, mean=5.30 log<sub>10</sub> ufc/m<sup>3</sup>; ds: 3.71 vs n=15, mean=2.32 log<sub>10</sub> ufc/m<sup>3</sup>; ds: 2.99). In hilly areas the pollution produced by round bales (in hay and air) was higher than in flat areas. On the contrary hay from small bales produced in hilly areas was poorest in SR spores. Conclusions: An heavy exposure to actinomycetes spores, therefore, comes from "round bales" hay handling, especially when the bales are produced in mountain areas. New drying systems, probably, can reduce this risk and raise hay quality.

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