

***I. ricinus* ticks / *Borrelia* sp. in the City – Conceptual Management, Prophylaxis and Countermeasures**

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The main objective of this study was to initiate a risk limitation concept for tick related diseases based on tick / *Borrelia*-data – in addition to a preliminary survey for the Western Palatine area. Kaiserslautern is a city with 100.000 inhabitants in the Westpfalz, growing into the forest with old stock of trees in home gardens, and with genuine forested islands reaching close to the traffic free zone. Light, sandy soils predominate. The authoress had observed growing tick occurrence, increasing concern of the population, and Borreliosis cases evidently from house gardens over several years.

4500 ticks *I. ricinus* were flagged over two 2 seasons between March 2002 and June 2003 at 83 sampling times from 37 locations in and around the city and the rural districts of Kaiserslautern. Among them was one single place without any ticks, and only in 2002.

From the 2002 collection, 32% ticks were infested with *Borrelia burgdorferi* s.l. out of 1849 PCR-tested individuals. PCR was carried out at the Department of Genetics of the Technical University in cooperation with the Institute for Immunology (both Kaiserslautern). Quiagen GmbH and the Ministry of Work, Social, Family & Health Rheinland-Pfalz supported the testing.

The investigation showed a plenty of systems, scenarios, chains and nets that are well able to enhance a tick population, for example:

- Tick population as a long-term consequence from a change in the past or in history.
- Lack of communication between users and owners of property may contribute to tick development.
- Local plant management and disposal policies may change tick growth.
- Tick biotopes were joined by a network of corridors including street borders etc..

Some may as well be used to inhibit tick growth in the future.

Some selected observations:

Large tick populations were found around a hospital, retirement home, cemetery e.g., and deserve special attention. Tick larvae on humans are very similar to mosquito bites. Tick larvae survived several weeks in very dry environment during the summer heat 2003.

Conclusions: Regardless of the extent of the tick/disease problem, the main focal issue to protect human and other vertebrate population from tick borne diseases is to reduce the likelihood of tick bites. There are many helpful instruments available, such as raising individual responsibility, education on personal protection, the creative use of contrasting colours, outdoor fecal hygiene, garden waste management, sustainable planning of gardens, the „Tick Management System“, denial of misleading advertisement, prudent use of repellents, encouragement of observation, etc. Available countermeasures should be trained to use in a reasonable and creative manner. Synergistic combinations thereof need further investigation.

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