Ticks and Tick-borne Diseases: Funding Fact Sheet

Prepared by the Public Tick IPM Working Group, www.tickipmwg.wordpress.com

Dramatic increases in ticks and tick-borne diseases require immediate action to improve resources for prevention and research. Human tick-borne disease incidence has doubled since 2003 and tripled since 1995, and the geographic distribution of ticks is constantly expanding. Investments in cost-effective, long-term solutions must be commensurate with the rising level of disease – however current investment falls far short of the costs.

Tick-borne Disease Facts: According to the CDC, tick-borne diseases accounted for 96% of all reported human vector-borne diseases in the US between 2004 and 2016.

- Tick-borne diseases are most prevalent in the northeastern and north central US.
- Known tick populations continue to spread geographically, attributed to:
  - Shifts in the climate increasing the habitable range and questing season;
  - Increasing human-tick contact due to changing land use patterns; and
  - Rising deer populations and changes in host availability.
- Annual acaricide perimeter sprays can significantly reduce tick populations.

Costs: Lyme disease can result in deterioration of physical and mental health, costly medical expenses and loss of income.

- In 2015, the estimated annual US direct and indirect costs from 380,690 new cases of Lyme disease totaled more than $4.1 billion, or $10,817/case.
  - If additional tick-borne diseases are considered, the number of cases and costs increases by 30 percent to an estimated $5.4 billion annually.
- Efforts to reduce Hepatitis C and West Nile virus were effective and provide evidence that commensurate funding would mitigate tick-borne disease.
  - In 2012 the NIH invested $112 million in hepatitis C with 1300 new cases annually, or $86,154/case. A $29 million investment was made for 5700 new cases of West Nile virus, or $5087/case.
  - The NIH only invested $25 million in 312,000 new cases of Lyme disease – that’s $80 per new case. Funding was reduced to $20 million in 2013.
    - The 2016 CDC funding line for Lyme disease was only $10.6 million.

Investments: With more ticks in more places, there is a need for continual surveillance, education and prevention, three integral parts to Integrated Tick Management (ITM).

- Public Health ITM should be targeted to high-risk, high-traffic sites such as parks and schools.
- Collaborations between local governments and mosquito control districts functioning as private pesticide applicators will allow for accurate surveillance data and treatment recommendations.
- Partnerships between the CDC, NIH, NIFA and county mosquito control districts are necessary.
Resources:
- North Central IPM Center Tick Pest Alert: https://www.ncipmc.org/action/alerts/ticks.pdf
- University of Rhode Island Tick Encounter Resource Center: http://tickencounter.org/
- Tick IPM Working Group Resources: https://tickipmwg.wordpress.com/resources/
- ESA Tick Management Presentations: https://www.entsoc.org/itms-presentations