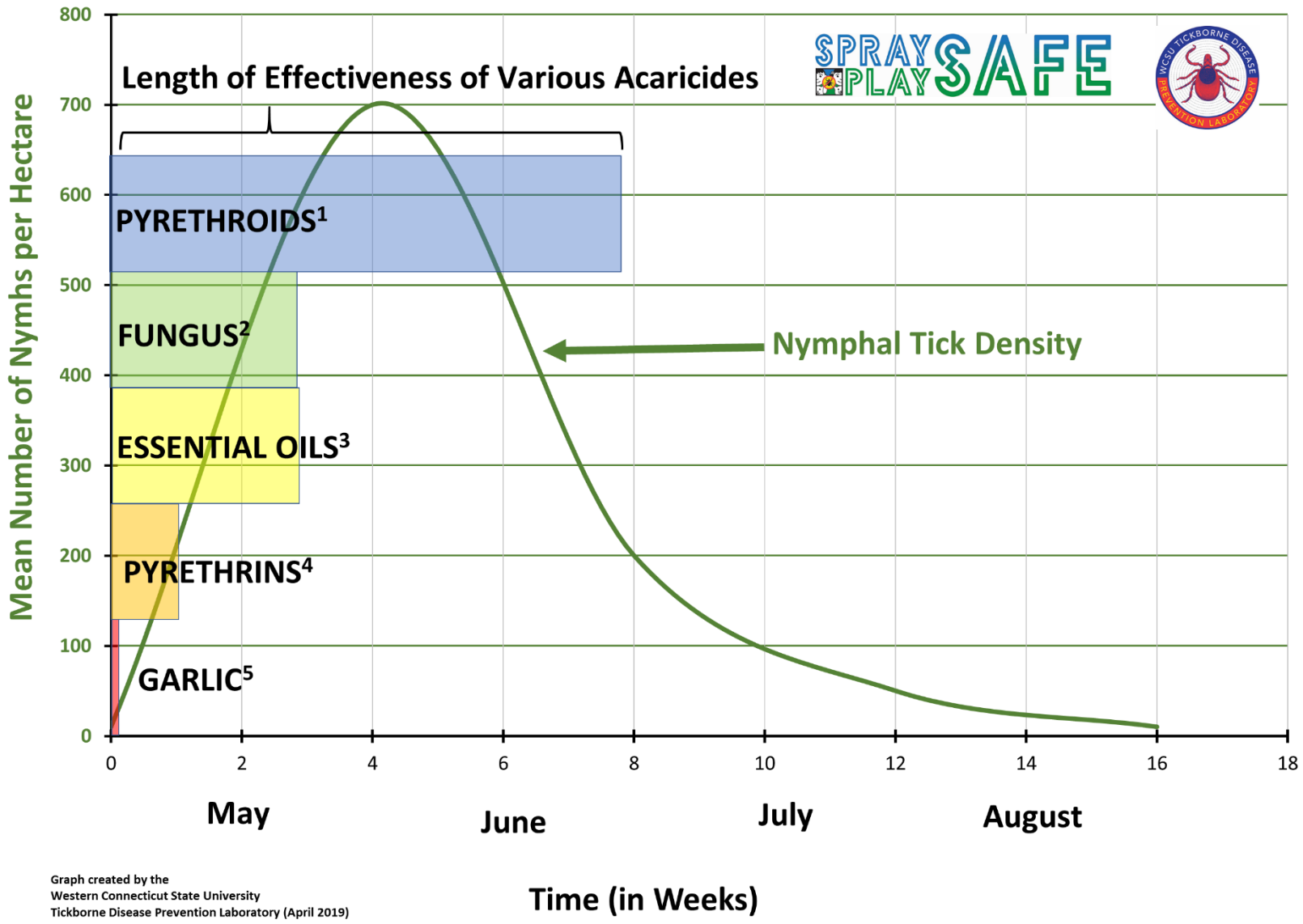
Effectiveness of Various Pesticides against Ticks



Graph created by the
Western Connecticut State University
Tickborne Disease Prevention Laboratory (April 2019)

Effectiveness of Various Pesticides against Ticks

By the Western Connecticut State University Tickborne Disease Prevention Laboratory. April 2019.

Graph data are summarized from Eisen and Dolan (2016). Data used in graph from studies showing: the maximum time of effectiveness with at least 85% control of host-seeking *I. scapularis* nymphs using high or low pressure sprays or granules, ground treatment in woodland or residential properties, spring application of a single spray (except essential oils, which were a dual spring spray, and garlic, which showed less than 85% nymphal control).

[1]Pyrethroid data: Spring application of cyfluthrin spray or cyfluthrin granules in a woodland setting (Solberg et al. 1992, summarized in Eisen and Dolan, 2016).

[2]Fungus: A single spring spray of *Metarhizium brunneum* (F52) on residential properties (Bharadwaj and Stafford 2010, summarized in Eisen and Dolan 2016).

[3]Essential oils: EcoTrol T&O spray applied 2 times in June in a woodland setting. EcoTrol T&O essential oil formulation: 10% rosemary oil, 2% peppermint oil, and 0.5% sodium lauryl sulfate with wintergreen oil, vanillin, lecithin, and butyl lactate (EcoSMART Technologies Inc., Alpharetta GA; Jordan et al. 2011, summarized in Eisen and Dolan, 2016). This formulation and product do not appear to be currently available for purchase.

[4]Pyrethrins: Pyrethrin soap spray applied once in June in a woodland setting (Allan and Patrican 1995, summarized in Eisen and Dolan 2016).

[5]Garlic juice: A single spray application of Mosquito Barrier to lawn-forest border in residential settings. Mosquito Barrier formulation: garlic juice 99.3%, citric acid 0.5%, and potassium sorbate 0.2% (Bharadwaj et al. 2015, summarized in Eisen and Dolan 2016). This formulation acts as a tick-repellent.

Alaska yellow cedar oil: Data are not shown for the effectiveness of nootkatone or carvacrol (from Alaska yellow cedar, *Chamaecyparis nootkatensis* [D. Don] Spach), as these products are not commercially available (Dolan et al. 2009).

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