

LDD Moth (*Formerly Gypsy Moth*) Management Options

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BioForest and LDD Moth



- 25+ years of invasive species monitoring and management
- 10+ years of LDD moth
- 20+ clients in southern ON
- Egg mass surveys, aerial spray program support, efficacy reporting
- Certified Arborists, Registered Professional Foresters, Tree Risk Assessment Qualified, Research and Development
- Acquired by Lallemand in 2018

Management Options

- Objectives for Management
 - Foliage protection, tree health, recreation value, etc.
 - Control does **not** affect outbreak dynamics
- Mechanical Control
 - Egg mass scraping
 - Burlap bands
- Chemical Control
 - Individual tree treatments
 - *Bacillus thuringiensis* var. *kurstaki* (Btk)
 - Systemic bio-insecticide (TreeAzin®)
 - Carbaryl, pyrethrin, and permethrin
 - Area-wide treatments
 - *Bacillus thuringiensis* var. *kurstaki* (Btk)
- No Control



Mechanical Control – Egg Mass Scraping

- September – April
- Putty knife/shop vac, soapy water in bucket
- Pros: easy, low-cost, timing not as important, activity for kids
- Cons: can only scrape egg masses within reach, not very effective in outbreak scenarios or in forested areas (a few missed egg masses can still impact tree), time consuming, safety
- Most appropriate for individual trees, small street trees, small yard/property with few landscaped trees



Photo: York Region

Mechanical Control – Burlap Banding

- June – July
- Burlap, twine, gloves, soapy water in bucket
- Pros: easy, low-cost, activity for kids (gloves!)
- Cons: doesn't catch all caterpillars, not very effective in outbreak scenarios or in forested areas, must physically remove caterpillars from band, supply, improper technique common
- Most appropriate for individual trees, street trees, small yard/property with few landscaped trees



Mechanical Control – Bug Barrier

- Bug Barrier Tree Band, Envirometrics Systems USA



Chemical Control – Individual Trees

- *Bacillus thuringiensis* var. *kurstaki* (Btk)
 - Egg hatch (late April/May)
 - Ground spray, safe for homeowner application
 - Pros: biological product (bacteria), environmentally and human safe, targeted
 - Cons: some level of feeding must occur before product is effective, coverage, drift, weather dependent, degrades quickly in environment (timing critical)
- Carbaryl, pyrethrin, and permethrin



Photo: City of Toronto

Chemical Control – Individual Trees

- Systemic Bioinsecticide (TreeAzin®)
 - Egg hatch (late April/May)
 - Licensed applicator
 - Pros: limits environmental exposure (drift), biological alternative, targeted, not weather dependent (systemic), full season control
 - Cons: more expensive, not effective in forested areas (single tree protection), licensed applicator



Chemical Control – Forested Areas

- *Bacillus thuringiensis* var. *kurstaki* (Btk)
 - Egg hatch (late April/May)
 - Aerial application, licensed applicator, permits, request for alternative notification (MOECP)
 - Pros: highly effective (80-90%), covers large area in short amount of time, likely population suppression in following year, appropriate coverage
 - Cons: expensive, logistics, coordination, staff resources, weather dependent, degrades quickly in environment (timing critical), supply, public support



No Control

- Healthy trees are resilient
 - Deciduous vs. coniferous
- Pros: low **upfront** cost, cyclical, most trees will not die (mostly aesthetic/nuisance)
- Cons: tree dieback/mortality possible, unpredictable hazards and costs, population migration, public perception, caterpillar-human interactions (allergic reaction), public may “take matters into their own hands”



No Control

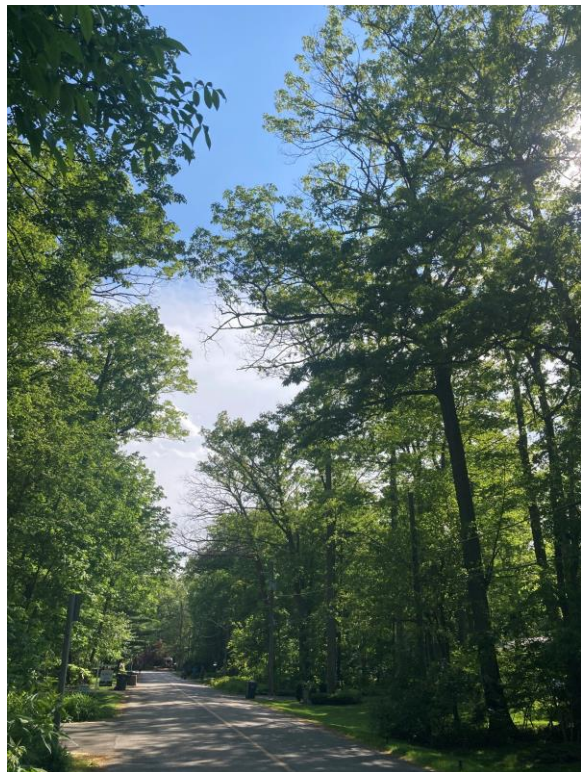
Photo: Brant County



Photo: York Region

No Control

End of May 2021



Mid-June 2021



End of June 2021



August 2020, Barrie



July-August 2020, Grand Bend



Photo: Invasive Species Centre

Annual Monitoring

- Egg mass surveys
 - Forecast defoliation risk next year
- Defoliation surveys
 - Record “actual” defoliation
 - Compare to forecasts
- Inform decision-making
- Keep your finger on the pulse
- Prepared and proactive





Thank you!

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