



Trace Explosives Sampling for Security Applications (TESSA) Workshop

“Challenges Associated with Substrate Properties during Contact Sampling”

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13 August 2014



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Security
Administration

Objective

- Discuss substrates used for ETD qualification
- Harvesting Effectiveness using various amounts of sampling pressure
- Expansion of substrates list used for qualification testing

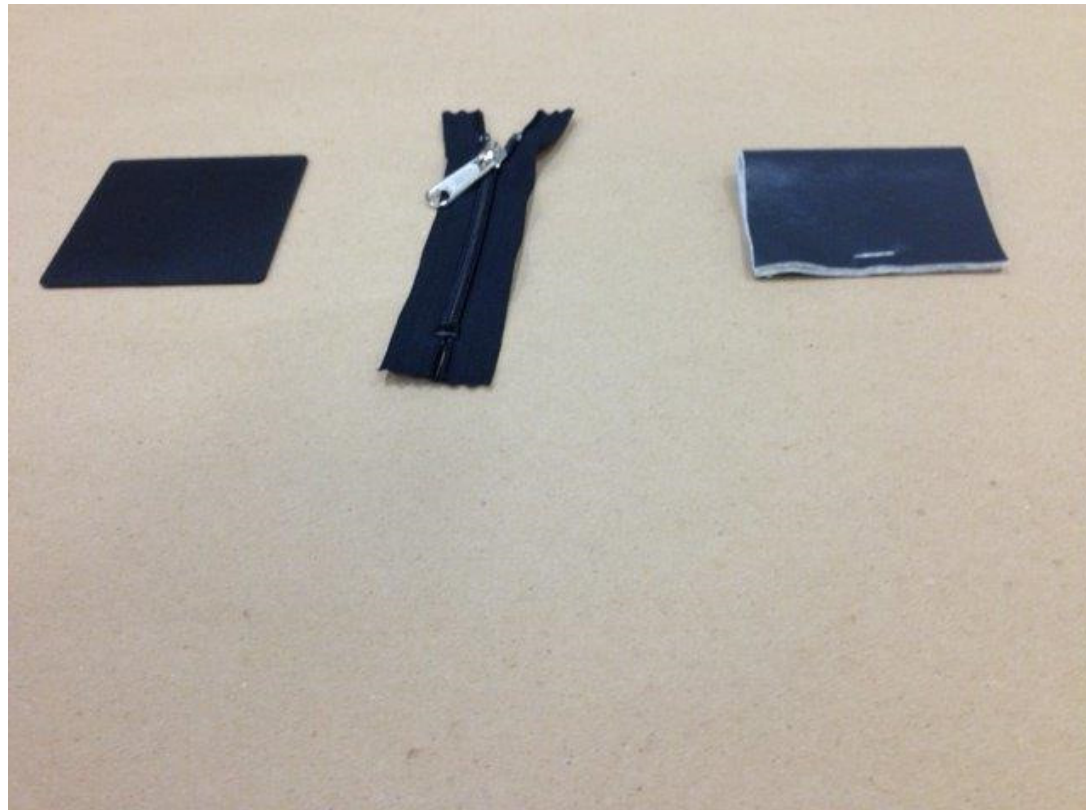
* Actual explosives names, detection levels and test Pd will not be discussed in this unclassified meeting status.



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Current Substrates

Checkpoint and Checked Baggage Substrates



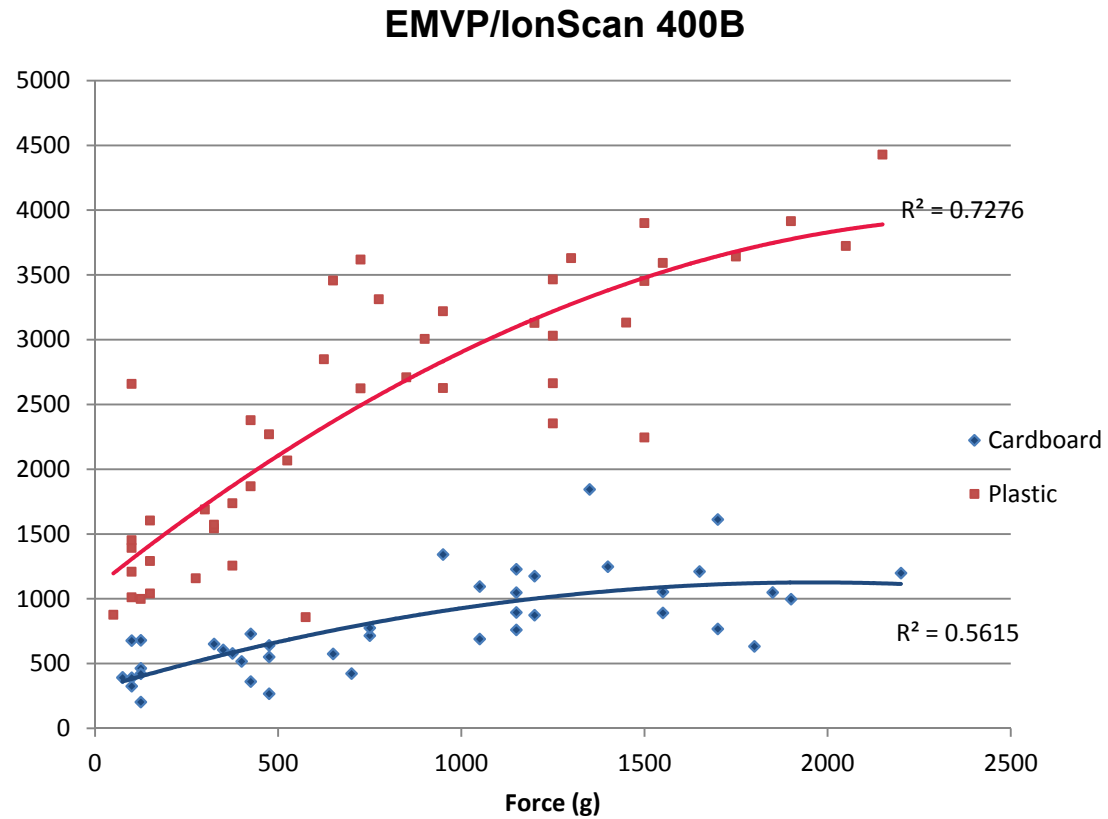
Current Substrates

Cargo



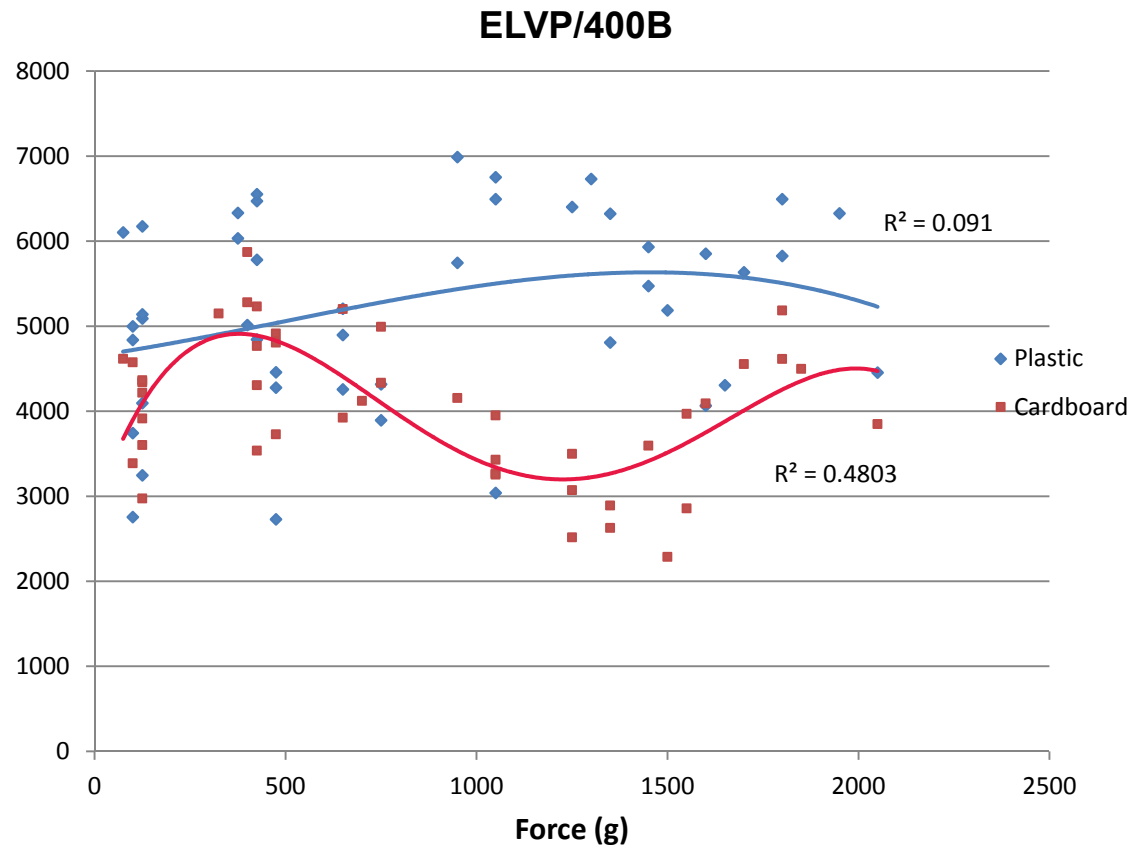
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Harvesting vs Substrate



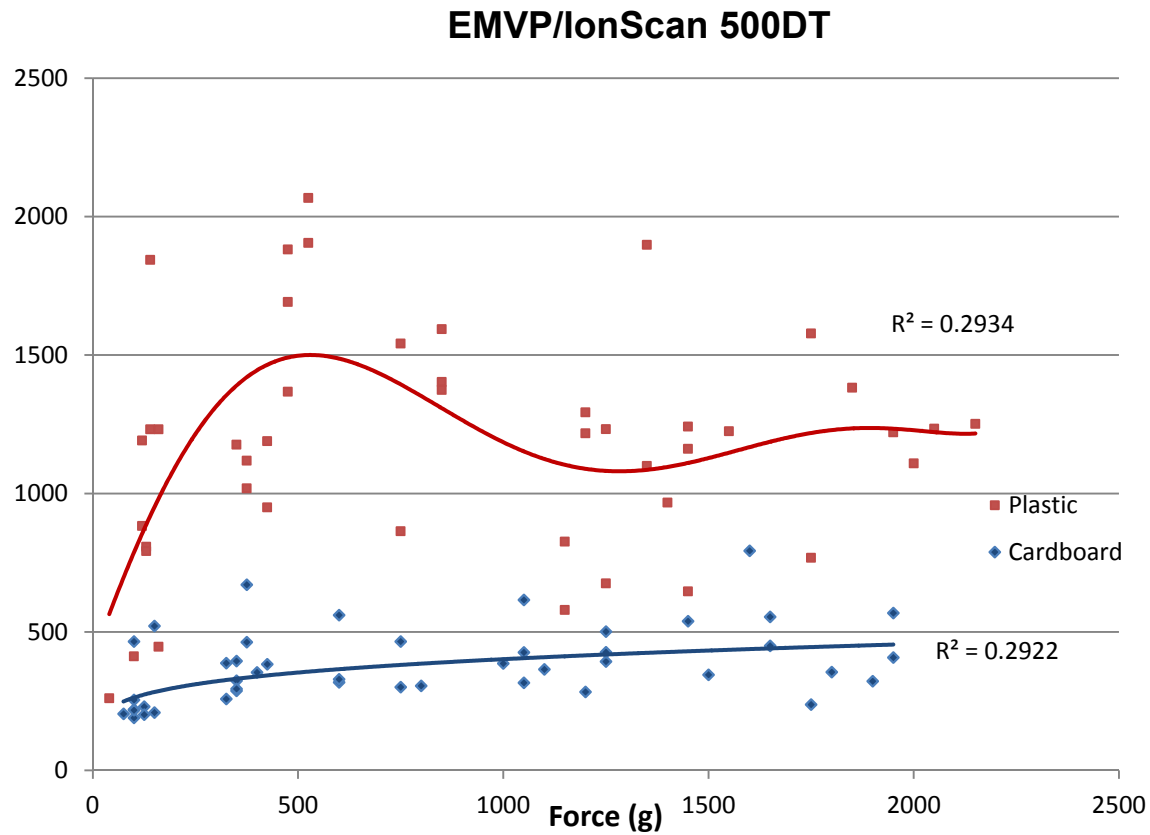
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Harvesting vs Substrate



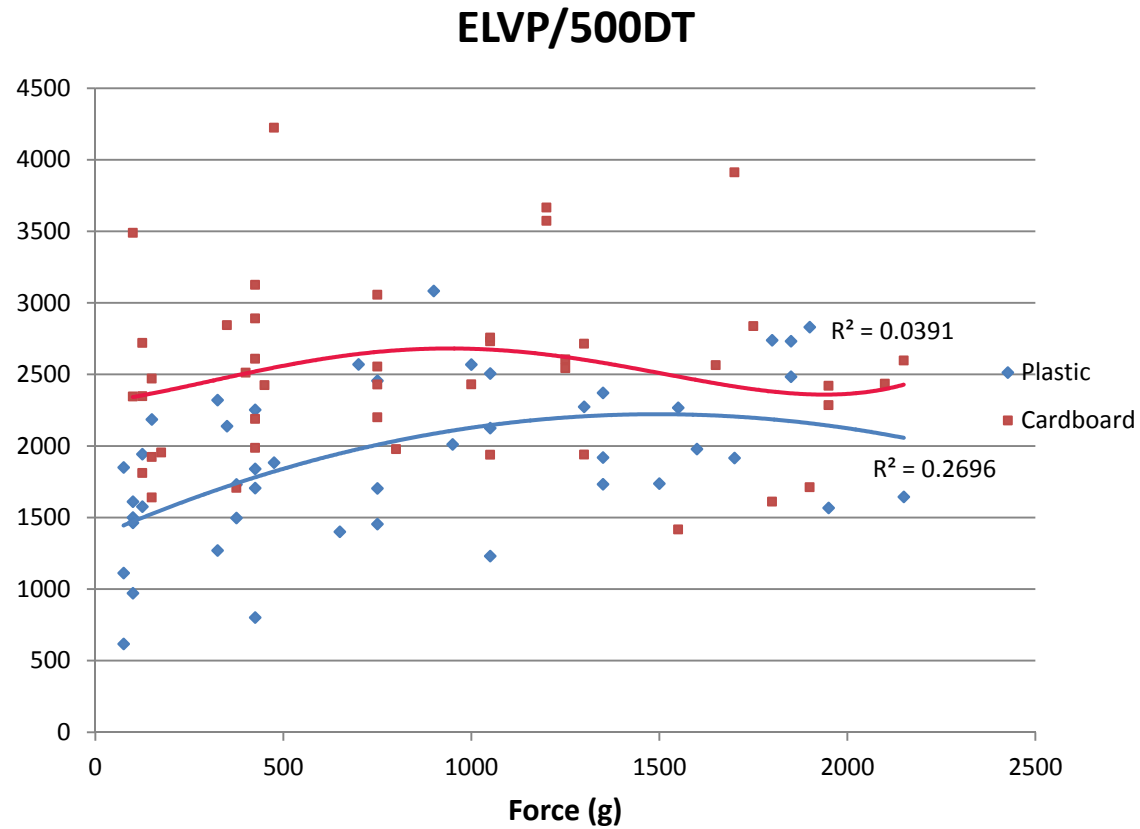
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Harvesting vs Substrate



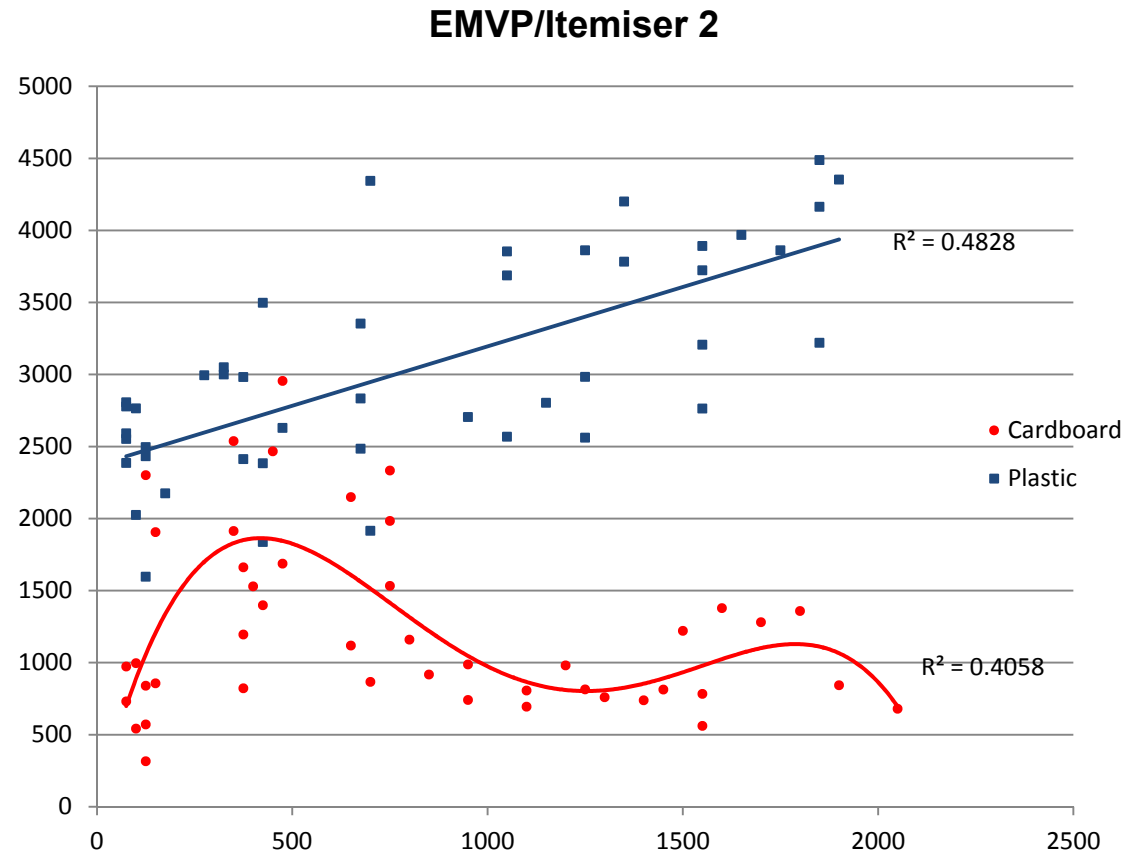
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Harvesting vs Substrates



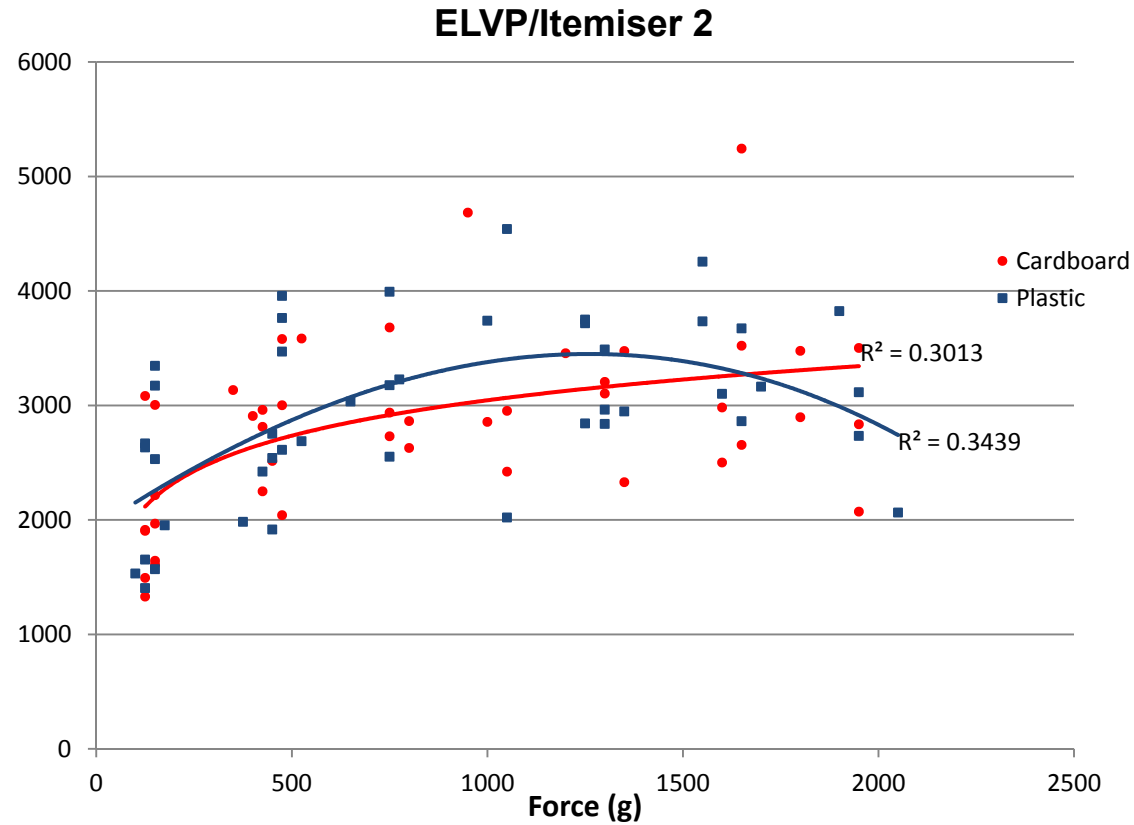
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Harvesting vs Substrates



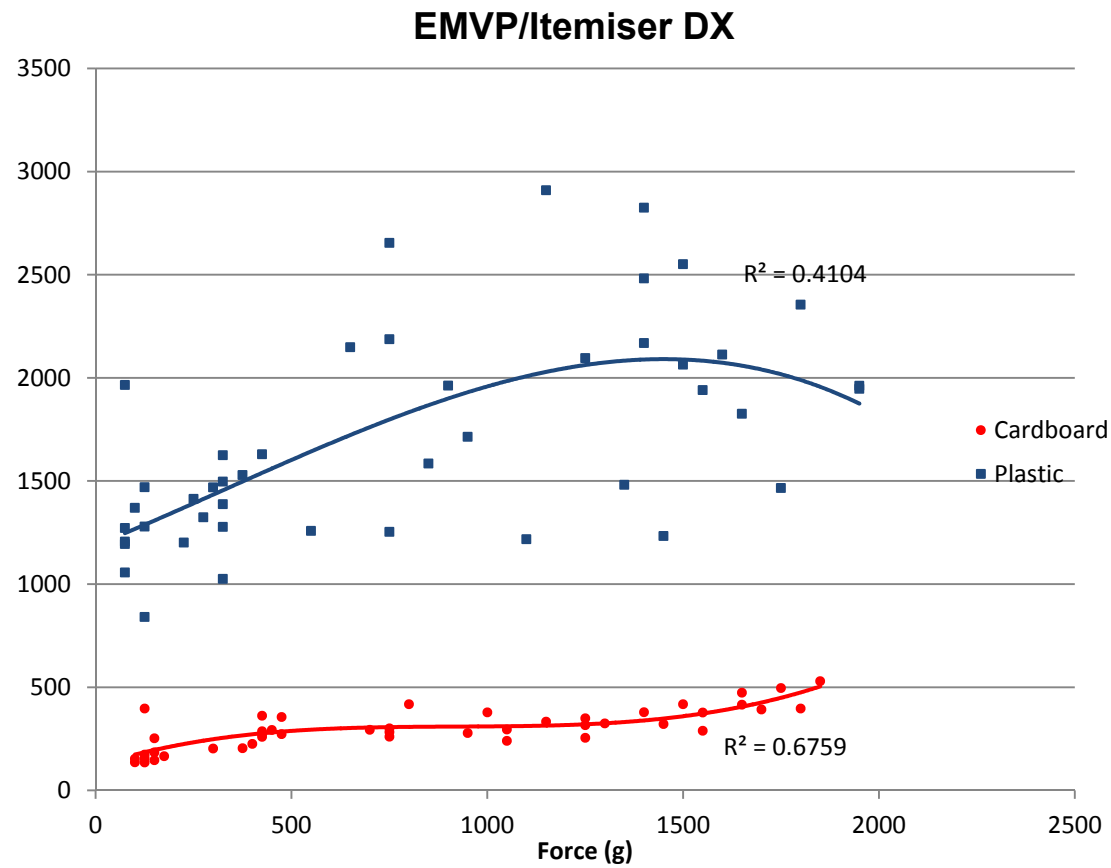
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Harvesting vs Substrate



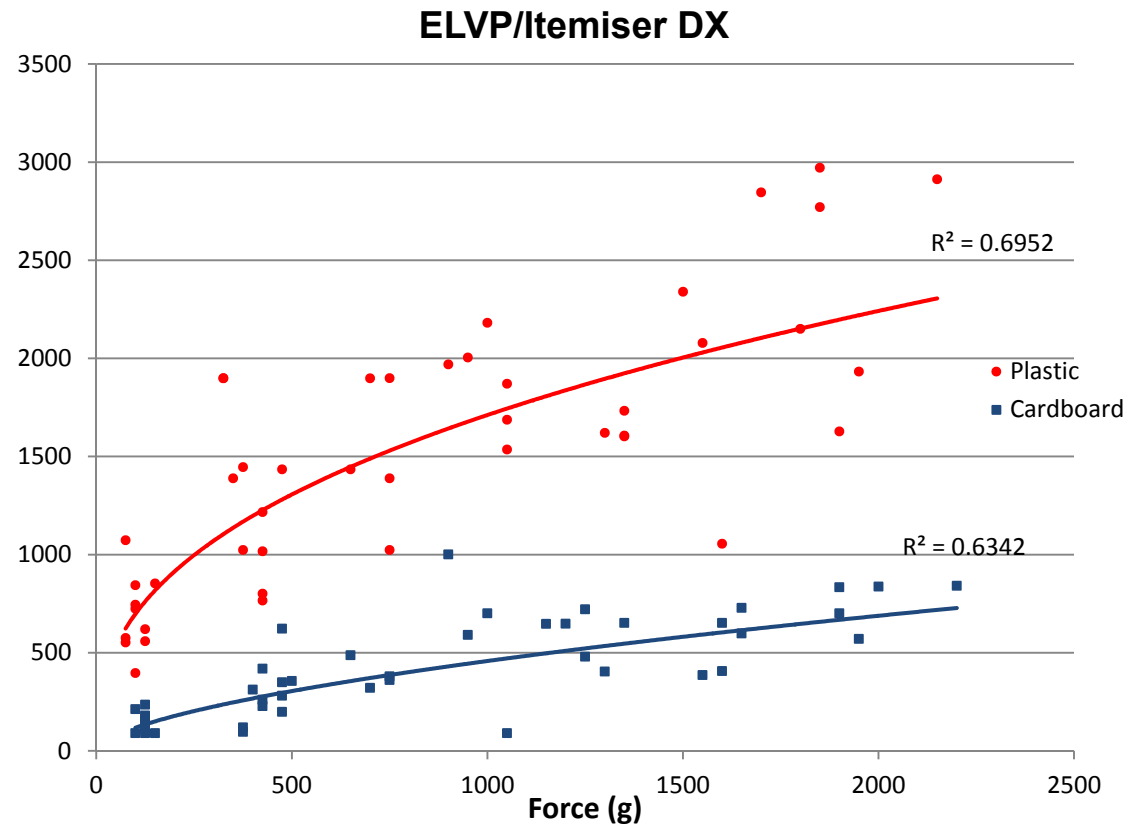
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Harvesting vs Substrate



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Harvesting vs Substrates



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Other ETDs

- Implant Sciences QS-B220
- Morpho/Syagen MS
- FLIR Griffin 844



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Challenges

- Each OEM chooses their sample media
 - Cotton Swabs
 - Nomex Swabs
 - Filter Paper Traps
 - Teflon coated fiberglass Traps
- Current substrates used are “outdated” when compared to items sampled



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Challenges

- Most efficient sampling pressure applied per sample media varies per substrate.
- No “single use” or “OEM blind” sample media developed.
- No studies of temperature, relative humidity or other environmental conditions effects on the release of particles from substrates



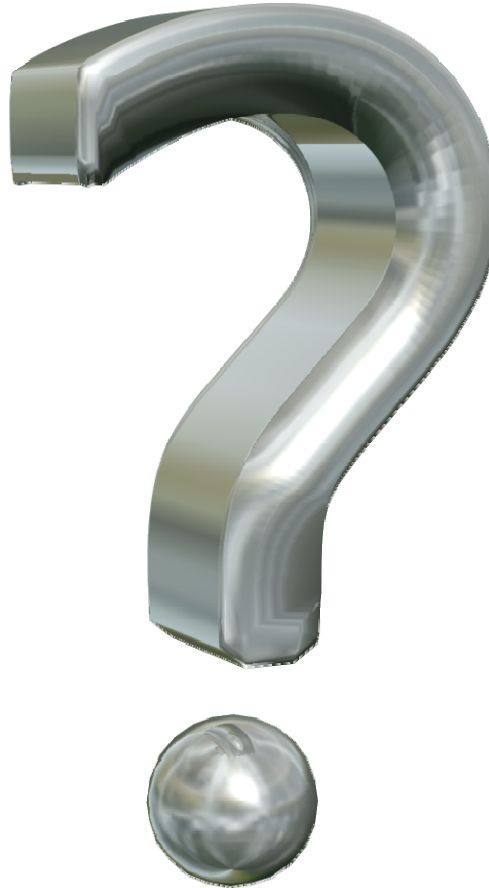
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Conclusion

- Each type of sample media has a different harvesting efficiency from each substrate at different sampling pressures.
- Number of uses of each sample media must be considered.
- Current substrate list needs to be updated to keep pace with sampling protocols.



Slide Title



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