



**Electrostatic
Spraying Systems**

www.maxcharge.com

- **Bruce Whiting**
- **Cameron Hobbs**

Watkinsville, Georgia, USA



OVERVIEW...

- **Who** is Electrostatic Spraying Systems? (ESS)
- **How** does ESS technology work?
- **Where** is ESS technology utilized?
- **What** current applications are there for ESS technology?
- **Questions & Answers**



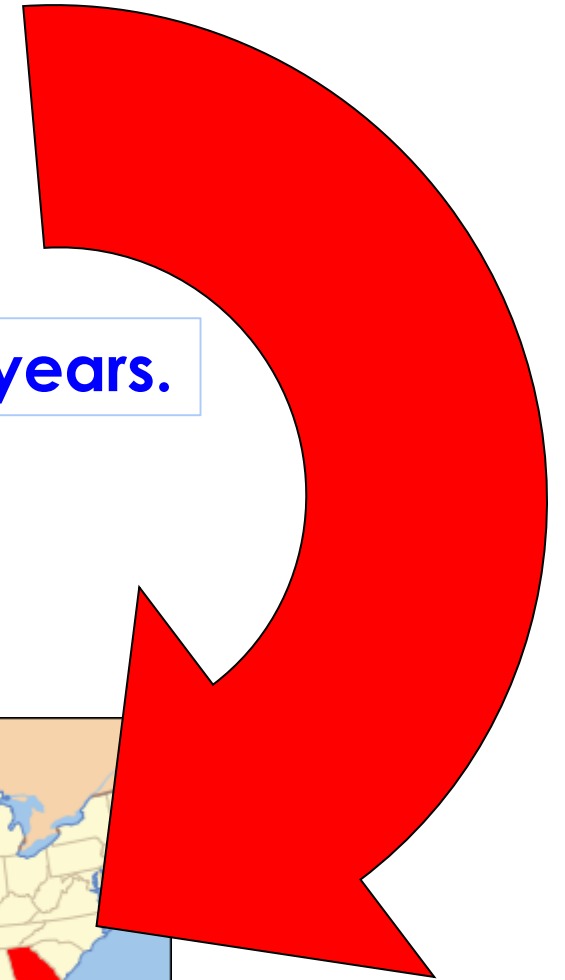
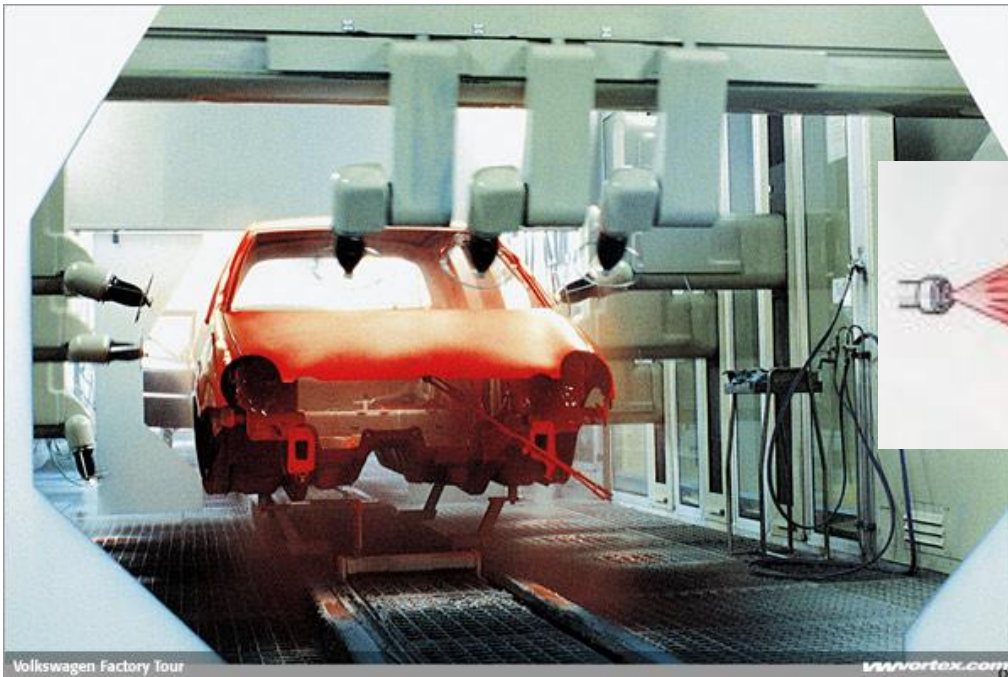
WHO?...

- o **Who** is Electrostatic Spraying Systems? (ESS)



The University of Georgia

Automobilespainted electrostatically for many years.





Effective electrostatic spray technology...

- Apply **water-based** solutions
- Produce **tiny** droplets...of approximately 40 microns in size
- Assure that each droplet is electrostatically **charged**
- Create **high electrostatic** attraction to the target
- Provide **even coating**
- Cover the **bottom and back sides** of the target
- Use **less water**
- Use **less chemical**

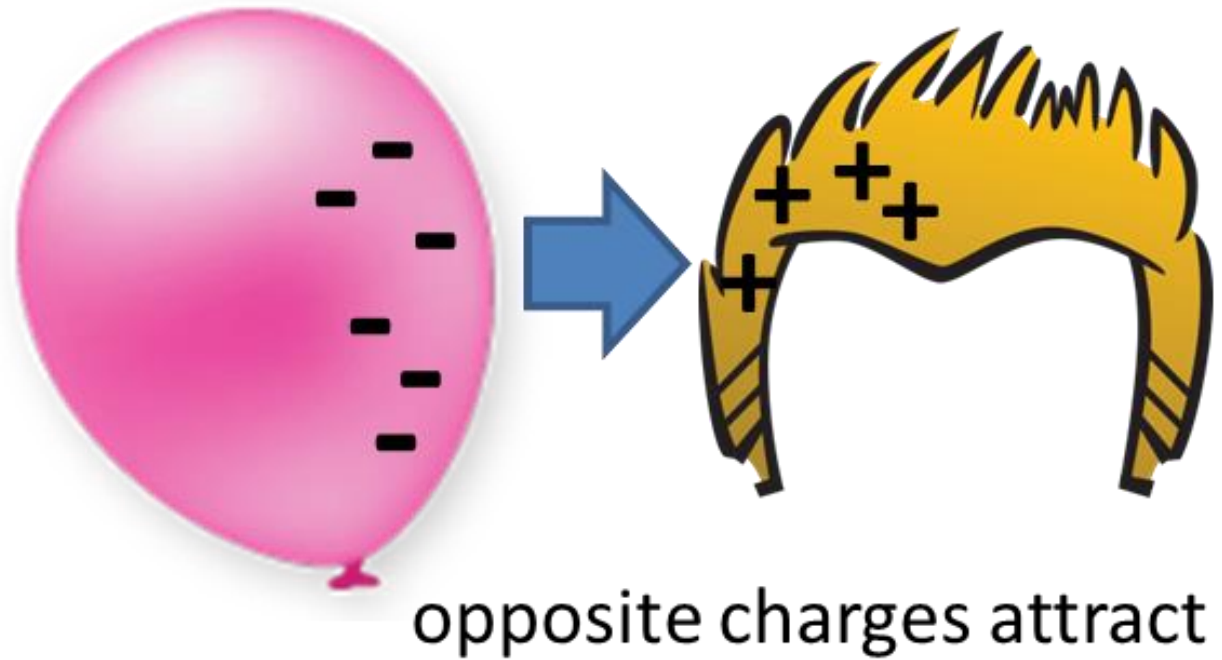


HOW?...

- o **HOW** does electrostatic spraying work?

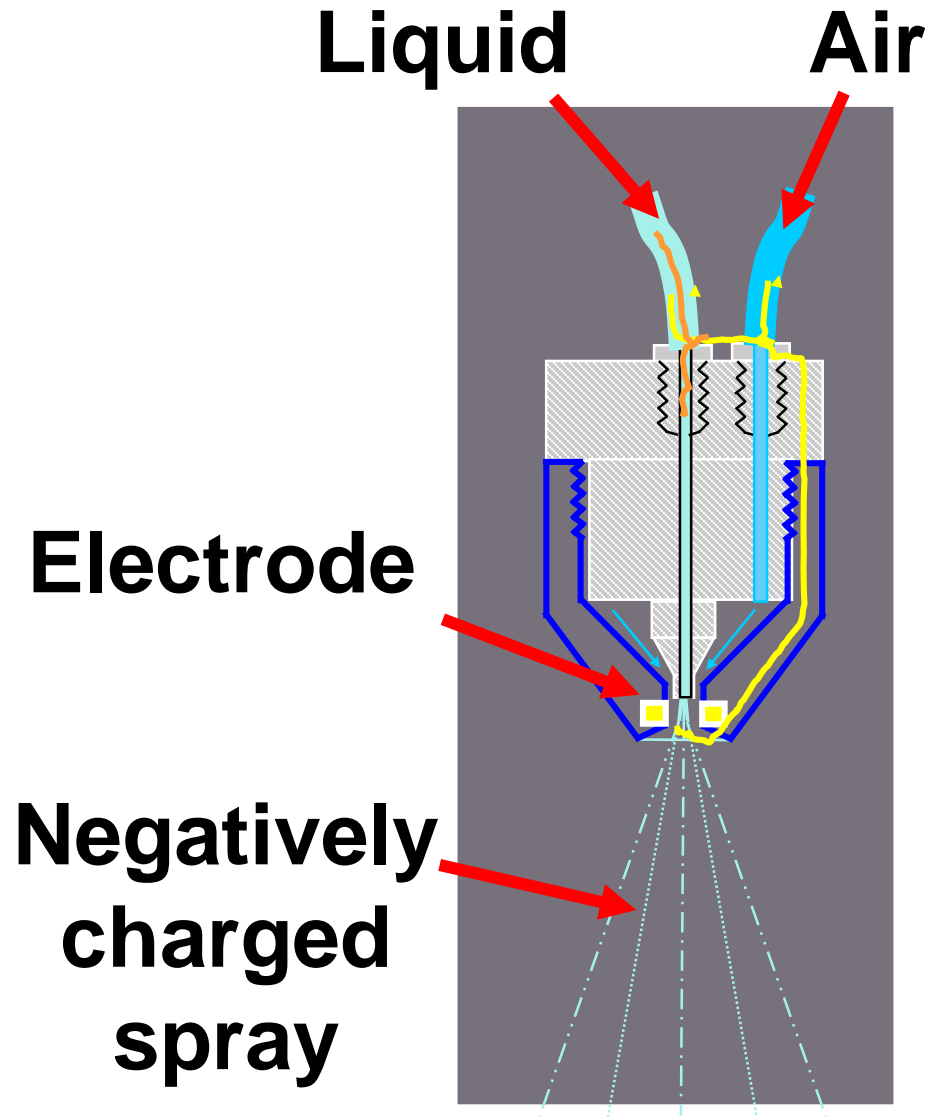
ESS

Electrostatic demonstration using a balloon and hair



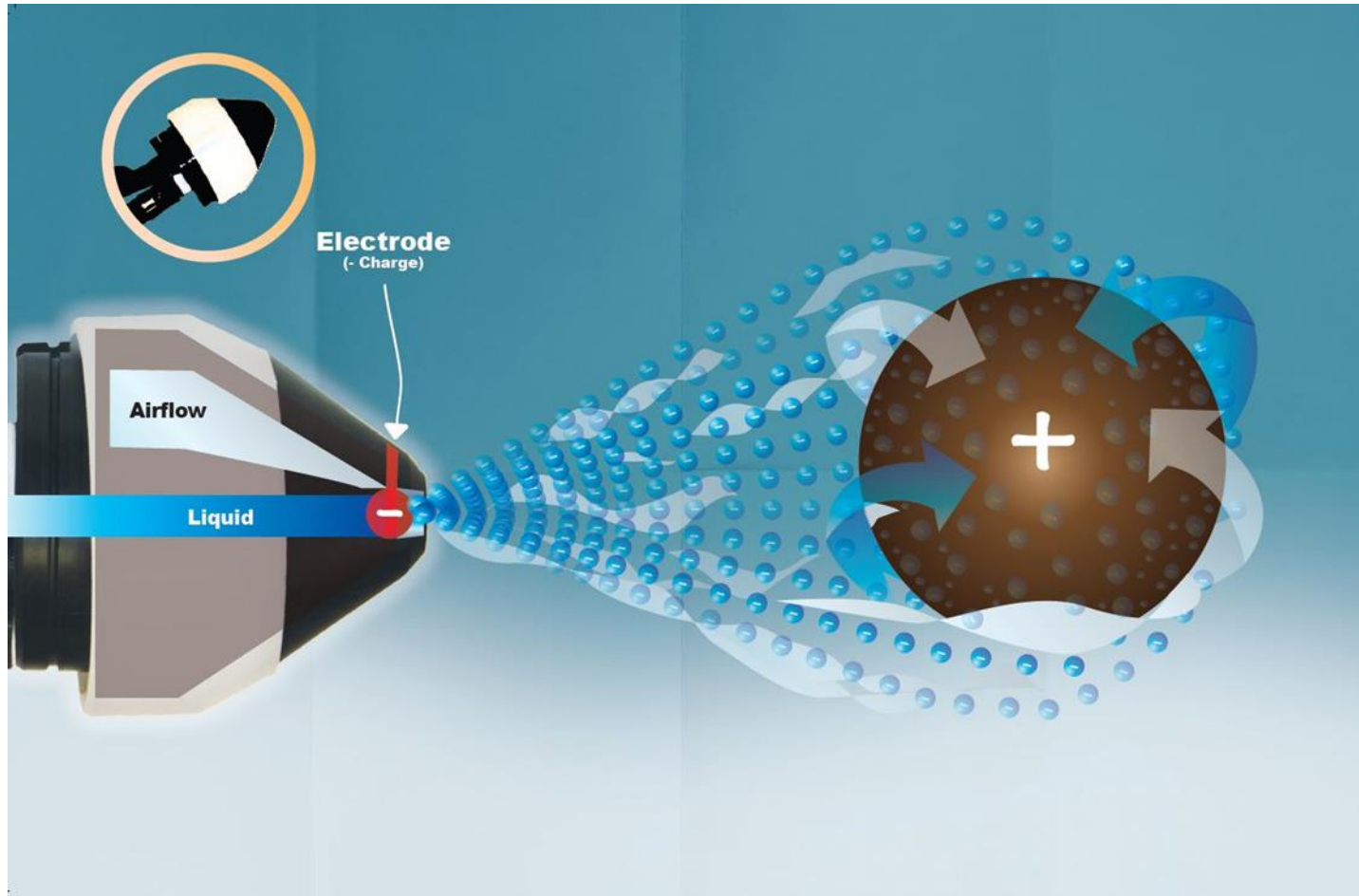


The Nozzle *...is the secret*





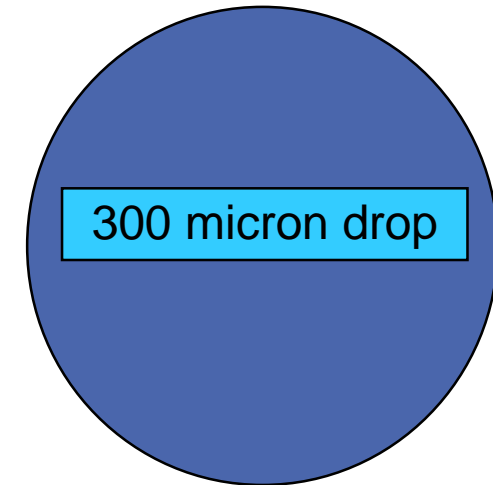
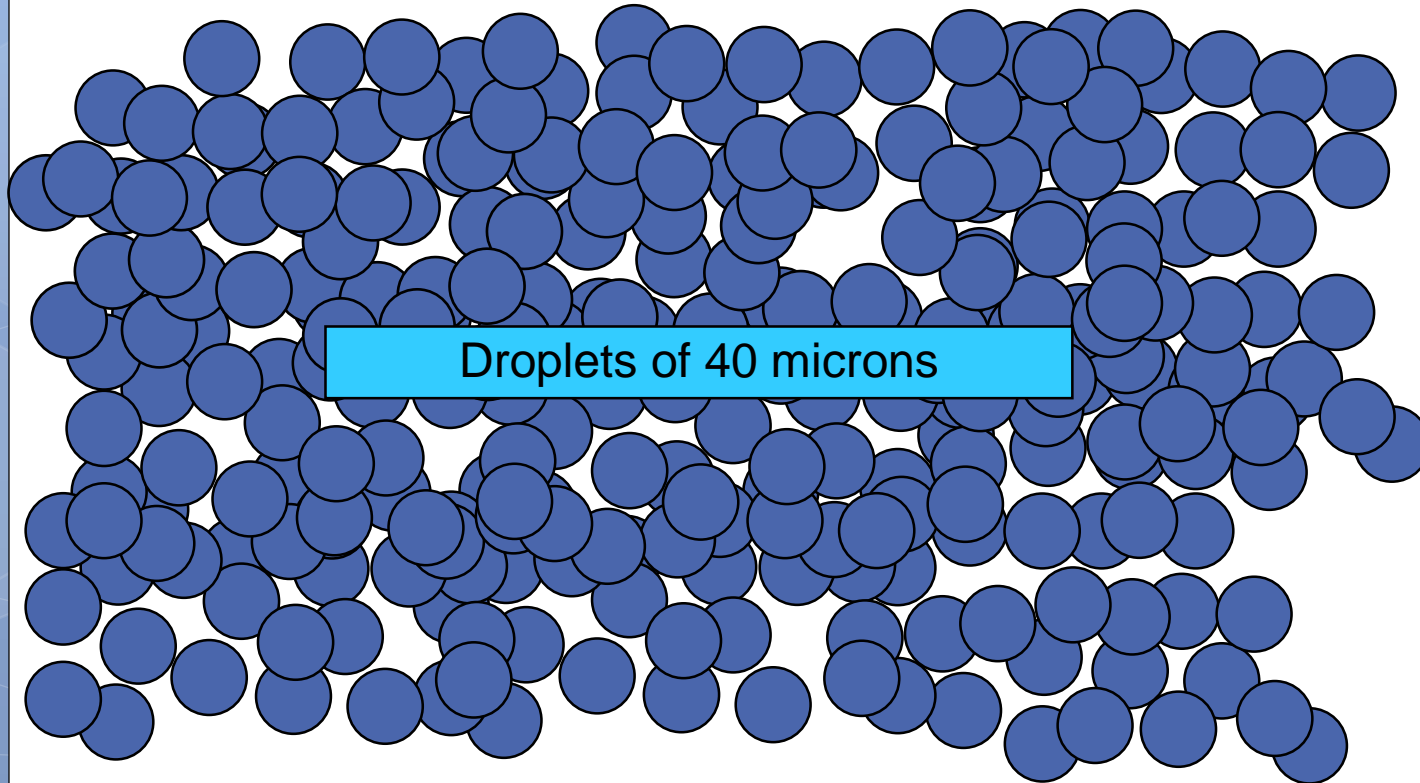
Electrostatic attraction and coverage





ESS spray technology....

Hundreds of small droplets **not** one large drop





Charge to Mass Relationship

Charge recorded (-microAmps)	liquid flow (mL/min)																					
	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	170	180	190	200
-3	-2.4	-2.3	-2.1	-2.0	-1.9	-1.8	-1.7	-1.6	-1.6	-1.5	-1.4	-1.4	-1.3	-1.3	-1.2	-1.2	-1.2	-1.1	-1.1	-1.0	-0.9	-0.9
-4	-3.2	-3.0	-2.8	-2.7	-2.5	-2.4	-2.3	-2.2	-2.1	-2.0	-1.9	-1.8	-1.8	-1.7	-1.7	-1.6	-1.5	-1.5	-1.4	-1.3	-1.3	-1.2
-5	-4.0	-3.8	-3.5	-3.3	-3.2	-3.0	-2.9	-2.7	-2.6	-2.5	-2.4	-2.3	-2.2	-2.1	-2.1	-2.0	-1.9	-1.9	-1.8	-1.7	-1.6	-1.5
-6	-4.8	-4.5	-4.2	-4.0	-3.8	-3.6	-3.4	-3.3	-3.1	-3.0	-2.9	-2.8	-2.7	-2.6	-2.5	-2.4	-2.3	-2.3	-2.1	-2.0	-1.9	-1.8
-7	-5.6	-5.3	-4.9	-4.7	-4.4	-4.2	-4.0	-3.8	-3.7	-3.5	-3.4	-3.2	-3.1	-3.0	-2.9	-2.8	-2.7	-2.6	-2.5	-2.3	-2.2	-2.1
-8	-6.4	-6.0	-5.6	-5.3	-5.1	-4.8	-4.6	-4.4	-4.2	-4.0	-3.8	-3.7	-3.6	-3.4	-3.3	-3.2	-3.1	-3.0	-2.8	-2.7	-2.5	-2.4
-9	-7.2	-6.8	-6.4	-6.0	-5.7	-5.4	-5.1	-4.9	-4.7	-4.5	-4.3	-4.2	-4.0	-3.9	-3.7	-3.6	-3.5	-3.4	-3.2	-3.0	-2.8	-2.7
-10	-8.0	-7.5	-7.1	-6.7	-6.3	-6.0	-5.7	-5.5	-5.2	-5.0	-4.8	-4.6	-4.4	-4.3	-4.1	-4.0	-3.9	-3.8	-3.5	-3.3	-3.2	-3.0
-11	-8.8	-8.3	-7.8	-7.3	-6.9	-6.6	-6.3	-6.0	-5.7	-5.5	-5.3	-5.1	-4.9	-4.7	-4.6	-4.4	-4.3	-4.1	-3.9	-3.7	-3.5	-3.3
-12	-9.6	-9.0	-8.5	-8.0	-7.6	-7.2	-6.9	-6.5	-6.3	-6.0	-5.8	-5.5	-5.3	-5.1	-5.0	-4.8	-4.6	-4.5	-4.2	-4.0	-3.8	-3.6
-13	-10.4	-9.8	-9.2	-8.7	-8.2	-7.8	-7.4	-7.1	-6.8	-6.5	-6.2	-6.0	-5.8	-5.6	-5.4	-5.2	-5.0	-4.9	-4.6	-4.3	-4.1	-3.9
-14	-11.2	-10.5	-9.9	-9.3	-8.8	-8.4	-8.0	-7.6	-7.3	-7.0	-6.7	-6.5	-6.2	-6.0	-5.8	-5.6	-5.4	-5.3	-4.9	-4.7	-4.4	-4.2
-15	-12.0	-11.3	-10.6	-10.0	-9.5	-9.0	-8.6	-8.2	-7.8	-7.5	-7.2	-6.9	-6.7	-6.4	-6.2	-6.0	-5.8	-5.6	-5.3	-5.0	-4.7	-4.5
-16	-12.8	-12.0	-11.3	-10.7	-10.1	-9.6	-9.1	-8.7	-8.3	-8.0	-7.7	-7.4	-7.1	-6.9	-6.6	-6.4	-6.2	-6.0	-5.6	-5.3	-5.1	-4.8
-17	-13.6	-12.8	-12.0	-11.3	-10.7	-10.2	-9.7	-9.3	-8.9	-8.5	-8.2	-7.8	-7.6	-7.3	-7.0	-6.8	-6.6	-6.4	-6.0	-5.7	-5.4	-5.1
-18	14.4	-13.5	-12.7	-12.0	-11.4	-10.8	-10.3	-9.8	-9.4	-9.0	-8.6	-8.3	-8.0	-7.7	-7.4	-7.2	-7.0	-6.8	-6.4	-6.0	-6.0	-6.0

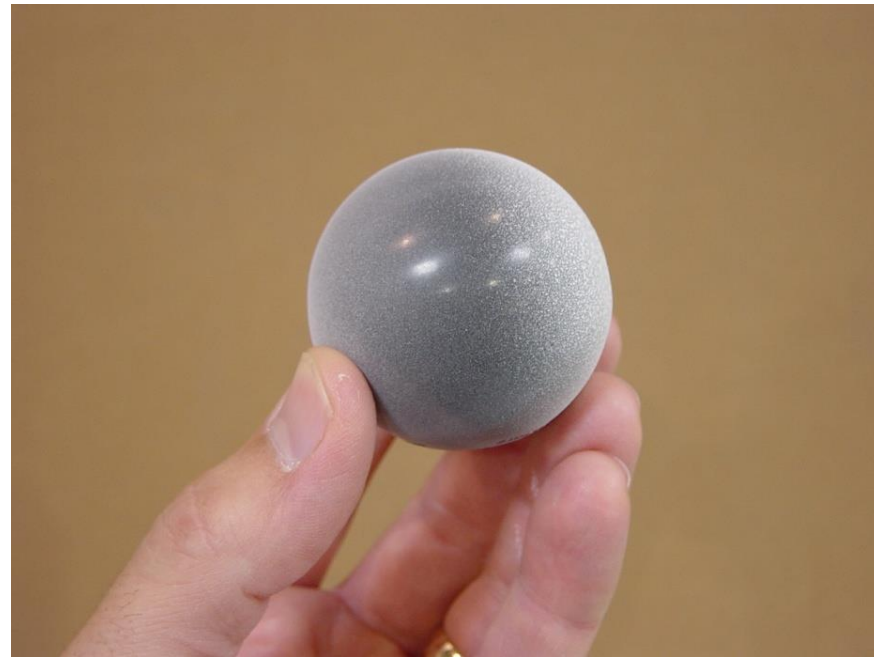


Electrostatic demonstration...which is better coverage?

No electrostatics



With electrostatics





WHERE?...

- **WHERE** does ESS do business and have sprayers?



ESS Spray Technology in 57 Countries





Worldwide Volume Distribution Partners



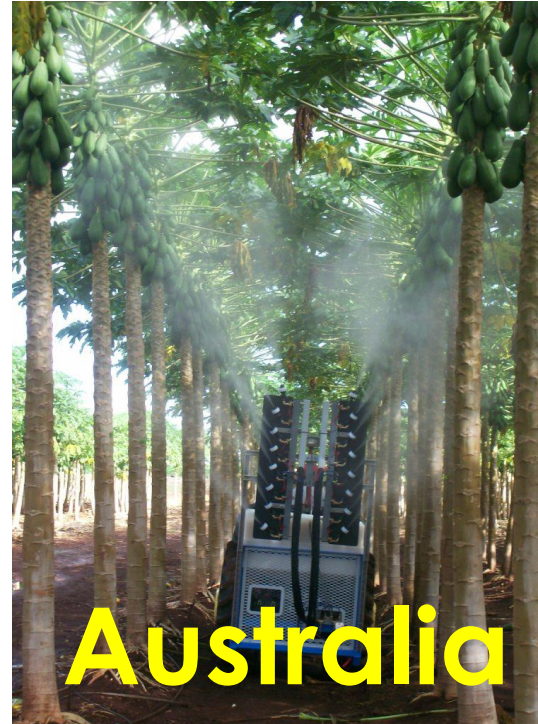


WHAT?...

- **WHAT** are the current applications?



Agriculture Sprayers





Greenhouse Sprayers





Building & Vehicle Sprayers





Post Harvest, Meat & Food





Disinfection Sprayers





Handheld Sprayers





Hospital Spray Carts





OTHER ELECTROSTATIC SPRAYERS:

- **Victory**



- **E-mist**



- **Hurricane fogger**



- **Clorox**



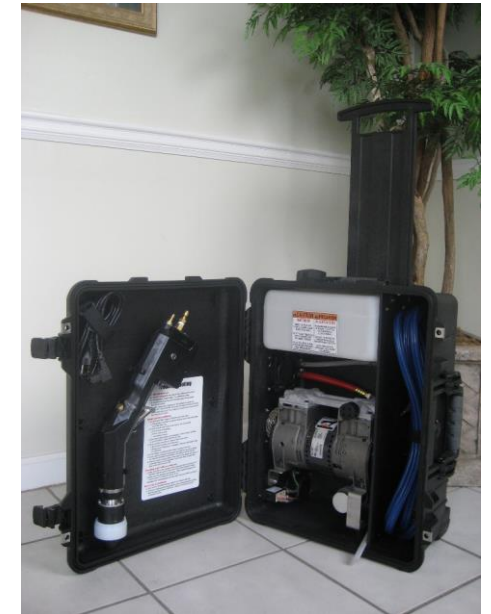
OTHER NON-ELECTROSTATIC:

- **Toni ionizer**
- **FogMaster**



DEMO SPRAYERS:

Demo sprayers are available for purchase at a major discount.





A few satisfied customers:





Electrostatic Spraying

- **Better coverage**
- **Less water**
- **Less chemical**

...It is that simple!