

Materials List for:

Measuring Spray Droplet Size from Agricultural Nozzles Using Laser Diffraction

Bradley K. Fritz¹, W. Clint Hoffmann¹

¹Aerial Application Technology Research Unit, USDA ARS

Correspondence to: Bradley K. Fritz at bradfritz@me.com

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Materials

Name	Company	Catalog Number	Comments
90% Non-ionic surfactant	Wilbur-Ellis	R11	R11 is the trade name of Wilbur-Ellis non-ionic surfactant.
HELOS-VARIO/KR	Sympatec GmbH System-Partikel-Technik	HELOS-VARIO/KR	This system is available with several different lens options that change the effective measurement size range.
Wind Tunnel/Blower systems	Custom built		Airspeed range of Low speed system is 0-7 m/sec and high speed from 18-98 m/sec
Air Compressor			There is no specific air compressor needed to feed the system. However, the larger the tank volume and the higher the working volumetric flow rating, the better it will keep up with the testing.
2015 and 4015 Aerial Nozzles	CP Products	CP11TT and CP05 swivel with 2015 and 4015 tips	These were the aerial nozzles detailed in the methods, however, any number of spray nozzles can be evaluated by this method.
11005, AI11005 and TTI11005 Ground Nozzles	Spraying Systems	XR11005, AI11005 and TTI11005	As with the aerial spray nozzles, these were the nozzles detailed in the Protocol, but this method is not limited to these nozzles
200 psi Stainless Steel pressure tank	Alloy Products Corp.	B501-0328-00-E-R	There are a number of suppliers with similar pressure vessels that can be used. This suppliers had the highest pressure rated tanks on the market
Various plumbing and air fittings and hoses			Liquid and air plumbing fittings and hoses as needed to plumb the entire system
200 psi Pressure regulator	Coilhose Pneumatics	8803GH	Any pressure regulator will work, this one was size to meet the high pressure needs as well as the plumbing used
Pressure transducer	Omega	PX419-150GV	This pressure transducer was selected to fit the higher pressure loads we use. There are other pressure ranges available from the manufacturer
Airspeed Indicator	Aircraft Spruce	Skysports dual dial airspeed indicator 30-250 mph.	Any airspeed indicator can be used. This one was selected to fit the speed range of our high speed aerial nozzle testing tunnel.

Hot Wire anemometer	Extech	407119	There are also a variety of options for measuring the airspeed in the low speed wind tunnel used for testing ground nozzles.
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