

## How To... Use the Airblast Calibration Calculator

The calculator is located under the Support Tab, Application Rates and Calculators

When you open the Application Rates and Calculators you will want to open the Airblast Calibration Calculator and the screen will look like this;

The calculator is designed to do two functions, help you pick the right Jacto model for your application and to calibrate your sprayer based on your application rate and number of nozzles needed to cover your crop canopy.

Jacto Airblast Sprayer Fitup Calculator										
Data Entry Cells										
Area to be sprayed (Acres)	20		Visual Warning Indicator Definitions:							
Application Rate (GPA)	35		Sprayer recommended based on given parameters							
Row width (Feet)	12		Limiting Factor - Confirm prior to demo							
Crop height (Feet)	7		Major Limiting Factor - Confirm prior to demo							
Headland (Feet)	20		Critical Limiting Factor							
Tractor Speed (MPH)	3									
PTO speed (RPM)	540									
Total GPM	2.55									
Sprayer	A200	A270	A400	A500N	A500T	A1000	A1500	A2000	A2000SE	A2000VA
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Acres	20	30	50	50	50	100	200	250	250	250
Min row width	4	4	4	4	5	6	10	12	12	12
Max row width	14	18	24	14	14	24	32	32	32	32
Crop Height	16	20	25	16	16	25	40	40	40	40
Headland	10	10	10	15	10	10	20	20	20	20
Spray capacity	8.8	10.4	16	10.4	10.4	18	36	36	45	72
Pump GPM	11	13	20	13	13	20	40	40	50	80
Sprayer fillups	14	10	7	5	5	3	2	1	1	1
Nozzle Qty	GPM Per Nozzle									
	6	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42

Both functions use the same data to provide you with information to select a model and to calibrate the model you have.

**Let's get started;** In the light aqua blue Data Entry Cells starting on line 3 thru 9 and column D you need to enter your known information. This is very important that you use accurate information as the formulas that are entered in the spreadsheet to make it work, take into account the total area of coverage based on acres covered, spray width and height.

Based on our example already entered in the spreadsheet here is an explanation:

- **Area to be sprayed ( Acres)** is the total acres... 20 acres of crop
- **Application Rate...** is typically the amount recommended by the chemical label... 35GPA (gallons per acre)
- **Row width...** is measured from center to center of the row... 12 feet
- **Crop height...** this is typically an average of the varied height within a row... 7 feet
- **Headland...** this is the amount of the room at the end of the row for turning before you hit a fence, ditch, roadway or other obstacle. We use this to determine if a particular model can be turned from one row into another without having to back up... 20 feet

- **Tractor Speed**... this is very important that use have an accurate speed as it is the one factor that greatly influences calibration. If you do not have a phone GPS app then the easiest way to calculate tractor speed is the time/distance test.
- To check your speed select the gear you think you want to spray in based on the owner's manual. Have the sprayer mounted to the tractor and half full of water. Put the tractor in gear, bring the engine RPM's up to the speed that will give you a 540 PTO speed, then start driving. Once at speed select a reference point to pass and continue for 30 seconds exactly and stop dead. Dismount the tractor and accurately measure the distance with a tape measure or distance wheel. For our example you drove 132 feet, now divide by 44 and you get 3 mph. 44 is a universal number used in calibration formulas. You could drive for 60 seconds and you would then divide by 88.
- **PTO Speed** is our last cell and all Jacto sprayers operate at 540 PTO only. If your tractor has a dual PTO 540 or 1000 rpm DO NOT operate a Jacto sprayer at 1000 rpm PTO speed as it will damage the unit.
- **Line 11** shows a **Total GPM** of 2.55... this is the total amount of liquid that will be sprayed per minute from the sprayer based on the information that was input.

At this point if you were using the calculator to help you decide what model to select you would refer to lines 13 - 23 to see if there were any warnings and to pick the model that most closely represents your application.

For our example, let's assume you already own a Jacto model A200 and you want to finish calibrating it based on the data entered and your crop is a vineyard. Typically in a vineyard you will need 2-6 nozzles per side to cover your crop based on a 7" tall canopy. Our application requires 12 nozzles... 6 per side. If you scroll down the spread sheet to lines 24 and following your screen will look like this. In Column A you will see different nozzle quantities. In our example we need 12 nozzles and on line 28 it shows us that at 2.55 GPM we are looking for a nozzle that will put out .21 GPM.

	A	B	C	D	E	F	G	H	I	J	K
22 Pump GPM		11	13	20	13	13	20	40	40	50	80
23 Sprayer fillups		14	10	7	5	5	3	2	1	1	1
24 Nozzle Qty		GPM Per Nozzle									
25	6	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
26	8	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
27	10	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
28	12	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
29	14	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
30	16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
31	18			0.14			0.14	0.14	0.14	0.14	0.14
32	20			0.13			0.13	0.13	0.13	0.13	0.13
33	22			0.12			0.12	0.12	0.12	0.12	0.12

At the very bottom of the spreadsheet you will see tabs marked Model which is the view you are in, Nozzles and Nozzles Metric. You want to move your mouse over the tab marked Nozzles and click on it. It will open another page.



Jacto Airblast Sprayer Fitup Calculator											
<b>Data Entry Cells</b>											
Area to be sprayed (Acres)	20										
Application Rate (GPA)	35										
Row width (Feet)	12										
Crop height (Feet)	7										
Headland (Feet)	20										
Tractor Speed (MPH)	3										
PTO speed (RPM)	540										
Total GPM	2.55										
Visual Warning Indicator Definitions:											
Sprayer recommended based on given parameters											
Limiting Factor - Confirm prior to demo											
Major Limiting Factor - Confirm prior to demo											
Critical Limiting Factor											
Total GPM: 2.55											
Sprayer	A200	A270	A400	A500N	A500T	A1000	A1500	A2000	A2000SE	A2000VA	
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Acres	20	30	50	50	50	100	200	250	250	250	250
Min row width	4	4	4	4	5	6	10	12	12	12	12
Max row width	14	18	24	14	14	24	32	32	32	32	32
Crop Height	16	20	25	16	16	25	40	40	40	40	40
Headland	10	10	10	15	10	10	20	20	20	20	20
Spray capacity	8.8	10.4	16	10.4	10.4	18	36	36	45	72	72
Pump GPM	11	13	20	13	13	20	40	40	50	80	80
Sprayer Silos	14	10	7	5	5	3	2	1	1	1	1
Nozzle Qty	GPM Per Nozzle										
	6	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42

This is your Nozzle page and it is the page where we complete the calibration calculation.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Total GPM:				2.55															
Metric Conversion:				0.26417															
Tolerance:				5%															
			PSI		60	75	90	100	120	150	180	200	210	240	250	270	300		
Nozzle	QTY	P/N																	
Hollow Cone ULV	JA-5	870360	0.0660	0.0710	0.0793	0.0820	0.0898	0.1004	0.1100	0.1159	0.1188	0.1270	0.1296	0.1347	0.1420				
	JA-1	109744	0.0845	0.0934	0.1004	0.1078	0.1181	0.1321	0.1447	0.1525	0.1563	0.1671	0.1705	0.1772	0.1868				
	JA-1.5	454256	0.1136	0.1233	0.1374	0.1424	0.1559	0.1744	0.1910	0.2013	0.2063	0.2205	0.2251	0.2339	0.2466				
	JA-2	000026	0.1691	0.1868	0.2008	0.2157	0.2363	0.2642	0.2894	0.3050	0.3126	0.3342	0.3410	0.3544	0.3736				
	JA-3	454264	0.2325	0.2503	0.2800	0.2890	0.3166	0.3540	0.3878	0.4088	0.4188	0.4478	0.4570	0.4749	0.5006				
	JA-4	454272	0.3302	0.3568	0.3989	0.4120	0.4513	0.5046	0.5527	0.5826	0.5970	0.6382	0.6514	0.6769	0.7136				
	JA-5	454280	0.4227	0.4763	0.5099	0.5500	0.6025	0.6736	0.7379	0.7779	0.7971	0.8521	0.8697	0.9038	0.9527				
Component Part Numbers																			
Nozzle	Spacer	Swirl																	
Disk	Core																		
Hollow Cone	J4-2	325332	642462	325373	0.2473	0.2827	0.3028	0.3196	0.3497	0.3910	0.4283	0.4491	0.4626	0.4945	0.5019	0.5245	0.5468		
	J5-2	325340	642462	325373	0.3709	0.4121	0.4543	0.4808	0.5245	0.5865	0.6424	0.6710	0.6939	0.7418	0.6948	0.7868	0.8189		
	J6-2	325357	642462	325373	0.5363	0.5970	0.6569	0.6948	0.7585	0.8480	0.9289	0.9722	1.0034	1.0726	1.0884	1.1377	1.1888		
Full Cone	J4-3	325332	642462	325977	0.3692	0.4121	0.4522	0.4782	0.5222	0.5838	0.6395	0.6736	0.6908	0.7385	0.7555	0.7833	0.8295		
	J5-3	325340	642462	325977	0.6165	0.7001	0.7551	0.8057	0.8719	0.9748	1.0678	1.1307	1.1534	1.2330	1.2601	1.3078	1.3790		
	J6-3	325357	642462	325977	1.0342	1.1676	1.2666	1.3394	1.4626	1.6352	1.7913	1.8888	1.9348	2.0684	2.1107	2.1939	2.3062		

You will notice that on line 4 Column D our total GPM 2.55 transferred to this page.

Your A200 sprayer comes from the factory with 16 each Black JA2 and Red JA4 nozzles. In our previous screen we noted that we needed 12 nozzles with an output of .21GPM each. If we look at the chart for our Black JA2 nozzles we see that they operate within that range and the Red JA4 nozzles start with a higher output than our required .21GPM. In row 12, column C enter 12 in the aqua colored area and hit enter. When you do that you will see in row 8, column J a green shaded box with the number 2.59 and it is just under the 100psi number. This tells you with your sprayer set at 100psi based on the information you input you will be spraying 2.59GPM or within .04GPM of your original calculation.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																			
3																			
4	Total GPM:			2.55															
5	Metric Conversion:			0.26417															
6	Tolerance:			5%															
7				PSI			60	75	90	100	120	150	180	200	210	240	250	270	300
8	Nozzle	QTY	P/N							2.59									
9	Hollow Cone ULV	JA-5	870360				0.0660	0.0710	0.0793	0.0820	0.0898	0.1004	0.1100	0.1159	0.1188	0.1270	0.1296	0.1347	0.1420
10		JA-1	109744				0.0845	0.0934	0.1004	0.1078	0.1181	0.1321	0.1447	0.1525	0.1563	0.1671	0.1705	0.1772	0.1868
11		JA-1.5	454256				0.1136	0.1233	0.1374	0.1424	0.1559	0.1744	0.1910	0.2013	0.2063	0.2205	0.2251	0.2339	0.2466
12		JA-2	12	000026			0.1691	0.1868	0.2008	0.2157	0.2363	0.2642	0.2894	0.3050	0.3126	0.3342	0.3410	0.3544	0.3736
13		JA-3		454264			0.2325	0.2503	0.2800	0.2890	0.3166	0.3540	0.3878	0.4088	0.4188	0.4478	0.4570	0.4749	0.5006
14	JA-4		454272			0.3302	0.3568	0.3989	0.4120	0.4513	0.5046	0.5527	0.5826	0.5970	0.6382	0.6514	0.6769	0.7136	
15	JA-5		454280			0.4227	0.4763	0.5099	0.5500	0.6025	0.6736	0.7379	0.7779	0.7971	0.8521	0.8697	0.9038	0.9527	
16																			
17				Component Part Numbers															
18				Nozzle	Spacer	Swirl													
19				Disk		Core													
20																			
21	Hollow Cone	J4-2	325332	642462	325373		0.2473	0.2827	0.3028	0.3196	0.3497	0.3910	0.4283	0.4491	0.4626	0.4945	0.5019	0.5245	0.5468
22		J5-2	325340	642462	325373		0.3709	0.4121	0.4543	0.4808	0.5245	0.5865	0.6424	0.6710	0.6939	0.7418	0.6948	0.7868	0.8189
23		J6-2	325357	642462	325373		0.5363	0.5970	0.6569	0.6948	0.7585	0.8480	0.9289	0.9722	1.0034	1.0726	1.0884	1.1377	1.1888
24																			
25	Full Cone	J4-3	325332	642462	325977		0.3692	0.4121	0.4522	0.4782	0.5222	0.5838	0.6395	0.6736	0.6908	0.7385	0.7555	0.7833	0.8295
26		J5-3	325340	642462	325977		0.6165	0.7001	0.7551	0.8057	0.8719	0.9748	1.0678	1.1307	1.1534	1.2330	1.2601	1.3078	1.3790
27		J6-3	325357	642462	325977		1.0342	1.1676	1.2666	1.3394	1.4626	1.6352	1.7913	1.8888	1.9348	2.0684	2.1107	2.1939	2.3062
28																			
29																			
30				Nozzle															

Your calibration is now complete. If you wanted use more or less nozzles at this same 2.55 rate just enter them in line 12, column C and see what pops up along line 8. If you exceed the capacity of the pump there may not be any information register along that line.

To calculate a new rate based on any of the variables just go back to the original sheet in the Model tab and enter the new data and proceed as before.