

Combo-Jet Spray Tips
Optimize your Spray Efforts
by Balancing Coverage & Drift



110° Spray Tip Charts for Standard and PWM Sprayer Systems
- Litres/Hectare on 50cm Nozzle Spacing -

# **COMBO-JET® Spray Tips The Combo-Jet Advantage**

# We make spray the for applicators who care about how they spray.



40% Longer Strainers that snap into place

SR MR DR UR 50% 75% 90% 90%+ **Drift Reduction Series** 

Not air induction, so spray tips work with PWM

> **Cap Color matches ISO flow rates**

> > **Permanent Stainless** Steel Tip

**Easier Handling with** snap-in design

Fits all nozzle bodies

Easy to read cap label (MR110-06 = MR Series, 110° tip, 0.6 USGPM flow rate)

**Droplet Size Selective Tip Options** 

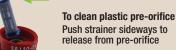
The Best Tips for Pulse Width Modulation Systems\* (e.g. Capstan Sharpshooter®/Pinpoint® II, Case AIMCommand®, Raven Hawkeye®, and more)

**Easy-to-Handle Spray Tip Cleaning** 

SR, MR, DR & UR Series

To clean stainless tip Pull strainer (with pre-orifice) up and out





**ER Series** Push strainer sideways to remove





To use/replace strainer Push strainer down to snap in strainer

Simple as that.

\*Capstan Sharpshooter®/Pinpoint® II, Case AlMCommand®, Raven Hawkeye® are not affiliated or owned by Wilger. They remain property of their resp

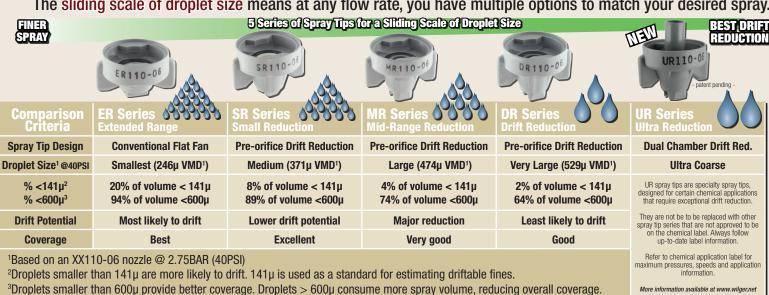
MR110-06

Combo-Jet tips use a modern pre-orifice and closed chamber design that produces significantly less drift, while creating solid mass droplets, for maximum spray velocity and more meaningful droplets.

Without needing consistent air induction for controlling drift.

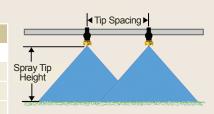
Combo-Jet spray tips have become the preferred tip for Pulse Width Modulation (PWM) spraying systems.

The sliding scale of droplet size means at any flow rate, you have multiple options to match your desired spray.



# Minimum spray tip height for each series of Combo-Jet spray tips

_			
Tip/Nozzle Body	Mi	inimum Spray Tip	Height
Spacing (cm)	ER80, SR80, MR80 & DR80	<b>ER110 Series</b>	SR110, MR110, DR110 & UR110
25cm	25cm	23cm	33cm
50cm	43cm	38cm	48cm
75cm	66cm	50cm	61cm





# Not sure which tips to use? Download Tip Wizard @ www.WILGER.NET

Tip Wizard makes spray tip decisions easier using with charts.







Enter your application to receive great info that can help you make better spraying decisions.

# 110° COMBO-JET® Spray Tips **Charts For Standard Sprayers**

Nozzle Spacing: 50cm Application Units: Litres/Hectare



# **LEGEND**

### **Recomended Pressure**

For applications which require a uniform pattern, the recommended pressure range is provided. Specified pressure in chart is boom pressure. For PWM spray systems, boom pressure will vary from spray tip pressure

### **ASABE Spray** Classification

(ASABE S572.1 Standard) Spray quality is categorized based on Dv0.1 and VMD droplet sizes.

3rd party testing from spray spectrum recording equipment has been used to classify spray quality for this chart.

Data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only to compare different series of Wilger spray tips. More information @ Wilger.net.

### **ASABE S572.1 Categories**

The majority of chemical labels will require spray application relating to a spray quality, to achieve ideal efficacy and spray drift reduction.

- Fine (F) Medium (M) Coarse (C)
- Very Coarse (VC) Extremely Coarse (XC) Ultra Coarse (UC)

### VMD

(Volume Median Diameter) Size of the median droplet (in  $\mu$ ) for a sprayed volume. Half of the volume is made up of droplets smaller than VMD, with half made of droplets larger

### % <141µ

(% Driftable Fines) Percentage of volume which is likely to drift. As wind conditions and boom height increase, observed spray drift will increased substantially.

# % <600μ

(% Useful Droplets) Percentage of volume which is made up of 'small' droplets. As % of useful droplets lowers, coverage is reduced.

### **Recomended Strainers**

Recommended strainer & mesh size is determined by the size of a tip. For larger tips (08+), strainers are not typically required.

### Pre-Orifice & Cap Color

SR/UR pre-orifices may vary from cap color. MR/DR pre-orifices will match cap color. Ensure correct pre-orifices are always used during application.



**Combo-Jet Cap Adapters** Square Lug Compatibility Combo-Jet® spray tips attach to Combo-Jet nozzle bodies. Use the #40204-00 adapater to use Combo-Jet spray tips on square lug nozzle

bodies. (e.g. Teejet)

# **TIP WIZARD**

Extremely Fine

<60µ

■ Very Fine
■ Fine

106-235µ

60-105µ

**Use Tip Wizard** Spray Tip Selector App Tin Wizard is an intuitive calculator. that takes your application information (speed, rate, spacing, etc.) and gives you spray tip options that would suite your spray tip needs.

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm (Not limited to human, livestock or environmental).

	Tip	Flow		Litı	res/H	ectar	e on 5	50cm	Spac	ing	Spra	y Cla	ss.; V	/MD (I	Oropl	et Siz	e in p	ı); %<	:141µ	ı (Drif	ft %);	%<60	00µ (S	Small	Drop	lets)	Spray Tip	& Part No.
	Cap	Rate	Bar		@ S <sub>I</sub>	praye	r Spe	ed - F	CM/H		ER	110	Ser	ies	SR	110	Ser	ies	MF	R110	Ser	ies	DR	110	Ser	ies	Spray Tip	Part #
į	No.	L/Min		8	12	16	20	24	28	32	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Strainer	Part #
		0.23	1.0	5.8	3.9	2.9	2.4	1.9	1.6	1.4	F	155	40%	100%	SI	R110-01	not ava	ul.	М	R110-01	1 not av	ail.	DF	R110-01	not ava	il.	ER110-01	40281-01
1		0.26	1.4	6.8	4.5	3.4	2.7	2.3	1.9	1.8	F	148	45%	100%	П		1		- 1	Use T	W qi	izard	for Y	our/		П.		
		0.30	1.7	7.6	5.0	3.7	3.1	2.6	2.1	1.9	F	144	48%	100%	Ι.						•		ion Ea		!			
1		0.34	2.1	8.2	5.5	4.2	3.4	2.7	2.4	2.1	F	140	51%	100%		WILG	ER						lator th					
	01	0.38	2.8	9.5	6.4	4.8	3.9	3.2	2.7	2.4	F			100%			*						d, rate, s s that w			r .		
1		0.42	3.4	10.6	7.1	5.3	4.3	3.5	3.1	2.7	F	128		100%	TII	P WI	ZAR	D,	tie EDI	EE to d		tip nee	eds. <b>ownlo</b> a	ad it to	lvch			
		0.45	4.1	11.7	7.7	5.8	4.7	3.9	3.4	2.9	F			100%		Goo	gle play			ole for u		Jau: Di	UVVIIIU	au it tt	uay:		400.14	O
		0.49	4.8	12.7	8.4	6.3	5.0	4.2	3.5	3.2	F	121		100%					avana.	. W			1	<b>D</b> .		_   -	100 Mesh	
		0.53	5.5	13.5	9.0	6.8	5.5	4.5	3.9	3.4	F			100%		App	Store	e W	WW	Αл		LG	13	K.	ΝÉ	П	[Gre	
ŀ		0.57	6.2	14.3	9.5	7.2	5.8	4.8	4.0	3.5	F			100%													4025 <sup>-</sup>	
-		0.34	1.0	8.9	5.8	4.3	3.5	2.9	2.6	2.3	F	158		100%	-	-	100/	-	-	-	-	-	-	-	-	-	ER110-015	
-		0.42	1.4	10.1	6.8 7.6	5.1	4.0	3.4	3.2	2.6	F	153 148		100%	M	237 225	18%		С	353	8%	91%	-	-	-	-	SR110-015 MR110-015	
		0.49	2.1	12.4	8.2	6.3	5.0	4.2	3.5	3.1	F	145		100%	F	215	21%	98%	C	322	11%	94%	С	366	7%	92%	DR110-015	
1		0.43	2.8	14.3	9.5	7.2	5.8	4.8	4.0	3.5	F	139		100%	F	199	28%		C	277		97%	C	328	10%		DITI 10-013	40200-013
	015	0.64	3.4	16.1	10.6	8.0	6.4	5.3	4.5	4.0	F	134		100%	F	187	32%		M	247	20%		C	301	12%	_		
ď		0.68	4.1		11.7	8.9	7.1	5.8	5.0	4.3	F	131		100%	F	177	34%		М	225	23%		C		14%	_		
		0.76	4.8	19.0	12.7	9.5	7.6	6.3	5.5	4.7	F	128		100%	F	169	37%		F	208	25%		М	265	15%	_	100 Mesh	Strainer
		0.79	5.5	20.3	13.5	10.1	8.0	6.8	5.8	5.1	F	125		100%	F	161	39%		F	194	28%		М		17%	_	[Gre	
Ī		0.87	6.2	21.6	14.3	10.8	8.5	7.2	6.1	5.3	F	123	65%	100%	F	155	41%	98%	F	183	30%	100%	M	240	18%	97%	4025	
Ī		0.45	1.0	11.7	7.7	5.8	4.7	3.9	3.4	2.9	F	182	26%	100%	-	-	-	-	-	-	-	-	-	-	-	-	ER110-02	40281-02
		0.53	1.4	13.5	9.0	6.8	5.5	4.5	3.9	3.4	F	173	32%	100%	M	237	18%	99%	-	-	-	-	-	-	-	-	SR110-02	40287-02
		0.61	1.7	15.1	10.1	7.6	6.1	5.0	4.3	3.7	F	166	36%	100%	M	227	21%	99%	С	341	9%	94%	-	-	-	-	MR110-02	40291-02
		0.64	2.1	16.6	11.1	8.2	6.6	5.5	4.7	4.2	F	160	39%	100%	M	219	23%	99%	С	315	12%	95%	VC	431	5%	82%	DR110-02	40286-02
	02	0.76	2.8	19.2	12.7	9.5	7.7	6.4	5.5	4.8	F	151	45%	100%	F	206	26%	99%	C	279	15%	97%	VC	392	7%	87%		
	02	0.83	3.4	21.4	14.3	10.6	8.5	7.1	6.1	5.3	F	144	49%	100%	F	196	29%	99%	M	254	19%	97%	С	361	8%	90%		
1		0.91	4.1		15.6		9.3	7.7	6.8	5.8	F	138	52%	100%	F	188	31%	99%	M		21%		С	336		92%		
		0.98	4.8		16.9	12.7	10.1	8.4	7.2	6.3	F	133		100%	F	181		99%	M		23%		С			93%	50 Mesh	Strainer
		1.06	5.5					9.0	7.7	6.8	F	128		100%	F	175		99%	F		25%		С		11%		[Blu	
		1.14	6.2	28.6				9.5	8.2	7.2	F	125		100%	F	170	36%	99%	F	198	27%	99%	С	281	12%	94%	40250	
-		0.57	1.0	14.6	9.8	7.2	5.8	4.8	4.2	3.7	F	199		100%	-	-	- 1E0/	-	-	-	-	-	-	-	-	-	ER110-025	
-		0.68	1.4	16.9	11.3		6.8	5.6	4.8	4.2	F	194		100%	M	255	15%		C	-	70/	- 000/	-	-	-	-	SR110-025	
-		0.76	1.7	18.8	12.6 13.8	9.5	7.6 8.2	6.3	5.5	4.7 5.1	F	190 186		100%	M	244 236	18%		C	369 350	7% 9%	88% 91%	VC	434	5%	80%	MR110-025 DR110-025	
H		0.03	2.8	24.0	15.9	11.9	9.5	8.0	6.8	6.0	F	181		100%	M	222	23%		C	320	11%		VC	398	7%	86%	DITT 10-023	40200-023
ŀ	025	1.06	3.4	26.7	17.9	13.4		8.9	7.6	6.8	F	176		100%	F	211	25%		C	296	13%		C	370	8%	89%		
1		1.17	4.1		19.5			9.8	8.4	7.2	F	173		100%	F	203	27%		C	277	15%		C	347	9%	92%		
Ė		1.25	4.8	31.5	21.1	15.8	1	10.5	9.0	7.9	F	170		100%	F	195	29%		M	261	17%	96%	C	328	10%	93%	50 Mesh	Strainer
i		1.32	5.5		22.5					8.5	F	167		100%	F	189	30%		М	247	18%		С	311	11%		[Blu	ie]
i		1.44	6.2	35.4	24.0	17.9	14.3	11.9	10.3	9.0	F	165	32%	100%	F	183	31%	98%	М	234	19%	97%	С	296	11%	95%	40250	
İ		0.68	1.0	17.5	11.7	8.9	7.1	5.8	5.0	4.3	F	208	23%	99%	-	-	-	-	-	-	-	-	-	-	-	-	ER110-03	40281-03
1		0.79	1.4	20.3	13.5	10.1	8.0	6.8	5.8	5.1	F	198	27%	99%	C	338	7%	92%	-	-	-	-	-	-	-	-	SR110-03	40287-03
		0.91	1.7	22.7	15.1	11.3	9.0	7.6	6.4	5.6	F	190	29%	99%	С	319	9%	94%	VC	416	5%	83%	-	-	-	-	MR110-03	40291-03
		0.98	2.1	24.8	16.6	12.4	10.0	8.2	7.1	6.3	F	183	31%	99%	С	303	11%	95%	VC	394	6%	86%	XC	479	4%	74%	DR110-03	40286-03
	03	1.14	2.8	28.6	19.2	14.3	11.4	9.5	8.2	7.2	F	173	35%	98%	С	279	15%	96%	С	360	9%	91%	VC	443	5%	80%		
	-00	1.29					12.9				F			98%	M			97%	-				=	414	6%	84%		
		1.40					14.0				F			97%	M			97%	_				=		6%			
		1.51					15.1				F			97%	M			98%	_			95%	=	371			50 Mesh	
		1.59					16.3							96%	F			98%									[Blu	
ı		1.70	6.2	43.5	28.6	21.6	17.2	14.3	12.2	10.8	F	144	44%	96%	F	209	24%	98%	M	262	15%	97%	С	339	8%	91%	40250	J-00

# If you are tired of picking parts out of the dirt, you will really like COMBO-JET® spray tips!

Droplet Categories as per ASABE S572.1 Classification (2009-current) with VMD estimate based on spray quality category

Coarse

341-403µ

■ Very Coarse ☐ Extremely Coarse

503-665µ

404-502µ

Medium

236-340µ

The strainer, O-Ring, tip & cap all snap together tightly, so the parts don't fall apart when you take them off for service. Combo-Jet spray tips are safer and easier to handle as one piece, and don't have any air induction ports to plug up.



■ Ultra Coarse

>665µ



# 110° COMBO-JET® Spray Tips Charts For Standard Sprayers Nozzle Spacing: 50cm Application Units: Litres/Hectare



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	Flour		Lite	res/H	ectar	e on !	50cn	n Sp	acin	g		S	pray	Class	ificat	ion; V	/MD (	Drople	et Siz	e in µ	ı); %<	<141µ	(Drif	t %);	%<60	00µ (9	Small	Droplets)	Spray Tip	& Part I
ip ap	Flow Rate	Bar		@ Sr	orave	r Spe	ed -	KM/	/н		FR		Ser			1110				1110	-			-	Seri			R110 Series	Spray Tip	Part #
0.	L/Min	<b></b>	8	12		20	24			32								<600										UR Tip Usage	Strainer	
	0.91	1.0		15.6						5.8	M			98%	-	-	-	-	-	-	-	-	-	-	-	-	-	on np osage	FR110-04	40281-
	1.06	1.4	27.0	18.0		10.8				5.8	М	240		97%	С	349	7%	91%	-	-	-	-	-	-	-	-	_		SR110-04	40287
	1.21	1.7	30.3	20.1		12.1				7.6	М	232		97%	С	330	9%	93%	VC	441	4%	80%	-	-	-	-	-	UR tips are specialty	MR110-04	40291
	1.32	2.1	33.8	22.0	16.6	13.2	11.1	1 9.	.5 8	3.2	M	225	22%	97%	С	314	11%	94%	VC	416	5%	84%	XC	510	3%	69%	UC	spray tips to produce ultra coarse spray.	DR110-04	40286
4	1.51	2.8	38.6	25.4	19.2	15.3	12.7	7 10	.9	9.5	F	215	24%	96%	C	288	14%	95%	C	377	7%	89%	VC	469	4%	76%	UC	Refer to chemical	UR110-04	40292
4	1.70	3.4	43.5	28.5	21.4	17.1	14.3	3 12	.2 1	0.6	F	206	26%	96%	M	269	16%	96%	C	346	8%	92%	VC	438	5%	80%	UC	application label for maximum		
	1.85	4.1	46.7	31.2	23.3	18.7	15.6	3 13	.4 1	1.7	F	199	28%	96%	M	253	17%	96%	С	321	9%	94%	VC	412	6%	83%	UC	pressures, speeds and application		
	2.01	4.8				20.3				2.7	F	194		95%	M	239	19%		C	300		95%	С	391		85%	UC	information.	50 Mesh	
	2.16	5.5				21.6				3.5	F	189		95%	M	228		97%	С			96%	C	372		87%	UC		[Blu	
	2.27	6.2				23.0				4.3	F	184			M	217	21%	97%	M	266	12%	96%	С	355	7%	88%	XC		4025	
	1.17	1.4	29.0			13.5				7.2 3.5	M	262		95% 95%	VC	402	5%	86%	•	-	-	-	-	-	-	-	-		ER110-05 SR110-05	40281 40287
	1.51		37.0							9.5	M	237	20%		C	377	7%	89%	XC	513	2%	67%			-	-		UR tips are specialty		40207
	1.63	2.1	41.8								M	228		95%	C	355	8%		XC	486		72%	XC	530	2%	63%	UC	spray tips to produce ultra coarse spray.	DR110-05	40286
	1.89	2.8				19.2					F	214		95%	C	322		93%	VC	445	5%	78%	XC	503		68%	UC	Refer to chemical	UR110-05	
5	2.12		53.1								F	203	28%		C	296		95%	VC	412		82%	XC	482		72%	UC	application label for maximum		
	2.31	4.1	57.9	38.6	29.0	23.3	19.5	5 16	.7 1	4.6	F	194	30%	95%	С	275	15%	96%	С	386	7%	85%	XC	465	3%	74%	UC	pressures, speeds		
	2.50	4.8	62.8	41.8	32.2	25.3	21.1	1 18	.0 1	5.8	F	187	32%	95%	M	257	16%	96%	С	364	7%	87%	VC	451	4%	76%	UC	and application information.	50 Mesh	Strain
	2.69	5.5	67.6	45.1	33.8	27.4	22.5	5 19	.3 1	6.9	F	180	34%	95%	M	242	17%	97%	C	344	8%	88%	VC	438	4%	78%	UC		[Bli	ue]
	2.84	6.2	72.4	48.3	35.4	29.0	24.0	20	.4 1	7.9	F	174	35%	95%	M	228	19%	97%	C	327	8%	89%	VC	427	4%	79%	UC		4025	0-00
	1.40	1.0				14.0				3.9	C	297		94%	-	-	-	-	-	-	-	-	-	-	-	-	-		ER110-06	4028
	1.59	1.4				16.3				0.1	С	282		94%	XC	479	2%	73%	-	-	-	-	-	-	-	-	-		SR110-06	40287
	1.78	1.7	45.1			18.2				1.3	M	270		94%	VC	444	4%	80%	XC	528		63%	-	-	-	-	-	UR tips are specialty spray tips to produce	MR110-06	4029
	1.97	2.1				19.8				2.4	M	261		94%	VC	416	6%	84%	XC	507		68%	XC	565		57%	UC	ultra coarse spray.	DR110-06	40286
ô	2.27	2.8				23.0			1.4 1		M	246		94%	C	371	8%	89%	XC	474		74%	XC	529		64%	UC	Refer to chemical application label	UR110-06	40292
	2.54	3.4				25.6 28.2				6.1	M	235 225	22%	95% 95%	C	337 308	10%	92%	VC	448		78% 81%	XC XC	501		68%	UC	for maximum pressures, speeds		
	2.76	4.1				30.6					F	217	25%		C	284		94%	VC	427 409		83%	XC	478 459		71% 74%	UC	and application information.	50 Mesh	Strain
	3.22	5.5				32.2					Ė	211	27%		M	264		95%	C	394		85%	VC	442		75%	UC	mornation.	JO MICSH	
	3.41	6.2				33.8					F	204	28%		M	245		96%	C	380		86%	VC	427		77%	UC		4025	
	1.85	1.0				19.3					М	353		88%	-	-	-	-	-	-	-	-	-	-	-	-	-		ER110-08	4028
	2.16	1.4	54.7	35.4	27.4	20.9	17.7	7 16	.1 1	2.9	М	327	14%	91%	UC	515	3%	52%	-	-	-	-	-	-	-	-	-		SR110-08	40287
	2.38	1.7	61.2	40.2	30.6	24.1	20.9	9 17	.7 1	4.5	F	307	16%	92%	UC	481	5%	61%	UC	561	4%	47%	-	-	-	-	-	UR tips are specialty	MR110-08	4029
	2.61	2.1	66.0	43.5	33.8	25.7	22.5	5 19	.3 1	6.1	F	290	17%	93%	XC	453	6%	67%	UC	531	4%	53%	UC	614	3%	40%	UC	spray tips to produce ultra coarse spray.	DR110-08	40286
8	3.03	2.8	77.2	51.5	38.6	30.6	25.7	7 22	.5 1	9.3	F	264	20%	95%	XC	408	7%	74%	UC	483	5%	61%	UC	569	4%	47%	UC	Refer to chemical application label	UR110-08	40292
	3.37	3.4	85.3	56.3	43.5	33.8	29.0	24	.1 2	0.9	F	244	22%	95%	VC	374	9%	79%	XC	446		67%	UC	534	4%	51%	UC	for maximum		
	3.71		93.3			37.0					F	228	23%		C	346			XC	416		70%	UC	506		55%	UC	pressures, speeds and application		
	4.01	4.8				40.2					F	214		97%	C	322		84%	XC	391		73%	UC	482		57%	UC	information.		
	4.28	5.5	108			43.5					VF	202		97%	C			86%	VC	369	8%	76%	XC	461		60%	UC			
	4.54	6.2				46.7				_	VF C			97%	С	284	12%	87%	С	349	8%	77%	XC	442	5%	61%	UC		FB110-10	4020-
	2.31		57.9 67.6							_	C	389	7% 10%	86% 88%	IIC	536	4%	47%			-	-			-	-			SR110-10	
	2.09		75.6							_	M			89%				56%	UC	552	4%	48%				-		UR tips are specialty	MR110-10	
	3.29	2.1				33.8					M			90%		470		62%	_	523		53%	UC	609	5%	59%	UC	spray tips to produce ultra coarse spray.	DR110-10	
	3.79	2.8				38.6					F			92%		424		70%		478		59%		584		55%	_	Refer to chemical	UR110-10	
D	4.24	3.4				43.5					F	277	19%	93%	XC	388		75%	XC	442		64%	_	565		51%	_	application label for maximum		
	4.62	4.1	117	77.2	57.9	46.7	38.6	33	.8 2	9.0	F	260	21%	94%	VC	358	9%	79%	XC	413		67%		550	6%	48%	UC	pressures, speeds and application		
	5.00	4.8	127	83.7	62.8	49.9	41.8	35	.4 3	2.2	F	246	22%	94%	C	333	10%	81%	XC	388	7%	70%	UC	537	6%	46%	UC	information.		
	5.34	5.5				54.7					F			94%				83%				72%	_	525		43%	_			
	5.68	6.2				57.9					F			95%	С	292	11%	85%	С	348	7%	74%	UC	515	6%	41%	UC			
	2.91		72.4								С			64%	-	-	-	-	-	-	-	-	-	-	-	-			ER110-125	
	3.33		85.3								C			70%	_		4%	48%	-	- 647	-	- 0.40/	-	-	-	-			SR110-125	
			95.0							_	C			74% 76%				56% 62%	_			34% 39%	IIC	647	3%	350/			MR110-125 DR110-125	
	4.09 4.73	2.1				41.8 48.3					M			80%		471		70%					_	647 616	3% 4%		UR	series spray tips	DN110-125	40200
.5	5.30	3.4				53.1					M			83%				74%	_						4%		com	are currently mercially available		
	5.79	4.1				57.9					M			85%	_			78%	_						5%			-04 to -10 sizes.		
	6.25	4.8				62.8					M			86%				80%	_											
	6.70	5.5				67.6					М			87%				82%				61%								
	7.12		179															84%							6%					

404-502μ

503-665µ

>665µ

<60µ

60-105µ

106-235µ

 $236-340\mu$ 

341-403µ



# 110° COMBO-JET® Spray Tips **Charts For Standard Sprayers**

Nozzle Spacing: 50cm Application Units: Litres/Hectare



# LEGEND

### **Recomended Pressure**

For applications which require a uniform pattern, the recommended pressure range is provided. Specified pressure in chart is boom pressure. For PWM spray systems, boom pressure will vary from spray tip pressure

### **ASABE Spray** Classification

(ASABE S572.1 Standard)
Spray quality is categorized based on Dv0.1 and VMD droplet sizes. 3rd party testing from spray spectrum recording equipment has been used to classify spray quality for this chart.

Data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided as an educational resource only to compare different series of Wilger spray tips. More information @ Wilger.net.

# **ASABE S572.1 Categories**

The majority of chemical labels will require spray application relating to a spray quality, to achieve ideal efficacy and spray drift reduction.

- Fine (F) Medium (M)
- Coarse (C)
- Very Coarse (VC) Extremely Coarse (XC) Ultra Coarse (UC)
  - VMD

(Volume Median Diameter) Size of the median droplet (in µ) for a sprayed volume. Half of the volume is made up of droplets smaller than VMD, with half made of droplets larger

### % <141µ

(% Driftable Fines) Percentage of volume which is likely to drift. As wind conditions and boom height increase, observed spray drift will increased substantially.

# % <600µ

(% Useful Droplets) Percentage of volume which is made up of 'small' droplets. As % of useful droplets lowers, coverage is reduced.

### **Recomended Strainers** Recommended strainer & mesh size

is determined by the size of a tip. For larger tips (08+), strainers are not typically required.

# Pre-Orifice & Cap Color

SR/UR pre-orifices may vary from cap color. MR/DR pre-orifices will match cap color. Ensure correct pre-orifices are always used during application.



# **Combo-Jet Cap Adapters**

Square Lug Compatibility Combo-Jet® spray tips attach to Combo-, let nozzle bodies. Use the #40204-00 adapater to use Combo-Jet spray tips on square lug nozzle bodies. (e.g. Teejet)



# **Use Tip Wizard**

Spray Tip Selector App Tip Wizard is an intuitive calculator that takes your application information (speed, rate, spacing, etc.) and gives you spray tips options that would suite your spray tip needs.

Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm (Not limited to human, livestock or environmental).

ı	Tip	Flow		Lit	res/H	ectar	e on 5	50cm	Spac	ing	Spra	y Cla	ss.; V	MD (	Dropl	et Siz	e in µ	ı); %<	:141µ	ı (Drif	t %);	%<60	)0µ (S	Small	Drop	lets)	Spray Tip	& Part No.
ı	Cap	Rate	Bar		@ S <sub>I</sub>	praye	r Spe	ed - F	(M/H		ER	110	Ser	ies	SR	110	Ser	ies	MR	R110	Ser	ies	DR	110	Ser	ies	Spray Tip	Part #
J	No.	L/Min		8	12	16	20	24	28	32	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Straine	Part #
٦		3.5	1.0	88.5	57.9	43.5	35.4	29.0	25.7	22.5	С	466	7%	58%	-	-	-	-	-	-	-	-	-	-	-	-	ER110-15	40281-15
ı		4.0	1.4	101	67.6	51.5	40.2	33.8	29.0	25.7	C	438	8%	64%	UC	598	4%	37%	-	-	-	-	-	-	-	-	SR110-15	40287-15
ı		4.5	1.7	113	75.6	56.3	45.1	37.0	32.2	29.0	C	416	10%	68%	UC	565	4%	45%	UC	629	4%	37%	-	-	-	-	MR110-15	40291-15
ı		4.9	2.1	124	82.1	62.8	49.9	41.8	35.4	30.6	С	398	10%	72%	UC	538	5%	51%	UC	608	4%	40%	UC	659	3%	40%	DR110-15	40286-15
ı	15	5.7	2.8	143	95.0	72.4	57.9	48.3	40.2	35.4	M	370	12%	76%	UC	496	6%	58%	UC	574	4%	45%	UC	624	4%	46%		
	13	6.4	3.4	161	106	80.5	64.4	53.1	45.1	40.2	M	348	13%	79%	XC	463	6%	64%	UC	548	5%	49%	UC	597	4%	50%		
		7.0	4.1	175	117	88.5	70.8	57.9	49.9	43.5	M	330	14%	81%	XC	436	7%	67%	UC	527	5%	52%	UC	575	4%	53%		
ı		7.5	4.8	190	127	95.0	75.6	62.8	54.7	46.7	F	315	15%	82%	XC	413	7%	70%	UC	508	5%	54%	UC	556	4%	55%		
ı		8.0	5.5	203	135	101	80.5	67.6	57.9	51.5	F	302	15%	84%	XC	393	8%	72%	UC	493	5%	56%	UC	540	5%	58%		
ı		8.5	6.2	216	143	108	85.3	72.4	61.2	53.1	F	290	16%	85%	VC	375	8%	74%	XC	479	5%	57%	UC	526	5%	59%		
Ц		4.6	1.0				46.7				С	528	6%	49%	-	-	-	-	-	-	-	-	-	-	-	-	ER110-20	40281-20
1		5.3	1.4				54.7				С	497	7%	56%	-	-	-	-		-	-	-	-	-	-	-	SR110-20	40287-20
ı		6.0	1.7							37.0		473		60%	UC	543	5%	49%	UC	616	4%	39%	-	-	-	-	MR110-20	40291-20
ı		6.5	2.1							41.8				64%			6%	55%	=	593	4%	42%	-	-	-	-		
ı	20	7.6	2.8				77.2				С	422		68%	XC	479	6%	62%	=	557	5%	48%	-	-	-	-		
ı		8.5	3.4				85.3				С	399		72%	XC	449		67%	=	529	6%	52%	-	-	-	-		
ı		9.3	4.1							57.9			10%		XC	424		70%	=	506	6%	55%	-	-	-	-		
ı		10.0	4.8				101				С			76%	XC	403		73%		487		57%	-	-	-	-		
ı		10.7	5.5							67.6			11%		XC	385		75%	XC	470	7%	59%	-	-	-	-		
Ц		11.4	6.2							72.4				79%		369	9%	77%	XC	455	7%	60%	-	-	-	-	ED440.05	10001.05
٦		5.8	1.0				57.9				C	526			-	-	-	-	-	-	-	-	-	-	-	-	ER110-25	
ı		6.7	1.4	169			67.6				C	495		54%	-	-	-	-	-	-	-	-	-	-	-	-	SR110-25	40287-25
ı	-	7.5	1.7	188						46.7		472		60%	UC	525	5%	52%	-	-	-	-	-	-	-	-		
ı		8.2 9.5	2.1	208	138 159		95.0			51.5	C	453 422		65% 71%	UC XC	503 468	6% 6%	56% 62%	-	-	-	-	-	-	-	-		
1	25	10.6	3.4	267	179		106				C	399		74%	XC	441	7%	66%	_		-	-	-		-	-		
7		11.6	4.1	293	195				83.7		C	380		77%	XC	419	8%	69%			-	-			-	-		
ı		12.5	4.1	315	211	158				78.9	C	364		79%	XC	400	8%	71%	_		-	-	-	-	-	-		
ı	-	13.4	5.5	338	225					85.3	C	350		81%	XC	384	8%	73%		_								
ı		14.2	6.2	359	240		143				C	337		82%	VC	369	9%	75%										
ı		7.0	1.0							43.5		536		50%	-	-	370	1370									ER110-30	40281-30
4		8.0	1.4	203			80.5				C	507	5%	55%	_	-	_	_	_	-	_	_	-	-	_	_	LITI 10-30	40201-00
ı		9.0	1.7							56.3		484	6%	58%	_	-	_	_	_	-	_	_	_	-	_	_		
ı		9.8	2.1				99.8				C	466		61%	_		_	_	_		_	_	_	-	_	_		
ı		11.4	2.8				114				C	437	7%	65%	_	-	_	_	_	-	_	_	_	-	-	_		
┚	30	12.7	3.4							80.5		415	8%	68%	_	-	-	-	-	-	_	_	-	-	_	-		
ī		13.9	4.1							88.5		396		70%	-	-	-	-	-	-	-	-	-	-	-	-		
		15.0	4.8		253					95.0		381	9%	72%		-	-	-		-	-	-	-	-	-	-		
		16.1	5.5				163				C	367		73%		-	-	-			-	-		-	-	-		
		17.0								108		355			-	-	-	-	-	-	-	-	-	-	-	-		
₹	$\overline{}$																											

# Did you know that size matters?

One 500 micron(µ) droplet deposits the **same volume** as 8x 250µ diameter droplets, or 64x 125µ droplets. That is why with smaller droplets, with the same flow rate, you get finer coverage. This makes it increasingly important to spray with the right size of spray to get the job done right.

# Protect your livelyhood by using the correct spray tip.

Minimizing crop damage and maximizing chemical efficacy means more than just impacting the crop. Proper spraying is an important aspect of every farm's bottom line, financially, environmentally, and legally.

Each field's spray conditions can differ greatly, so it is imperative that spray tips match those conditions.

To achieve the best application control, use the Combo-Jet ER/SR/MR/DR/UR spray tip that matches your chemical applications' ideal droplet size or spray quality, and then adjust for your spraying conditions.

Use Tip Wizard or charts to help.





# 110° COMBO-JET® Spray Tips **Charts For PWM Sprayers**

Nozzle Spacing: 50cm Application Units: Litres/Hectare

Read the spray tip chart disclaimer on page 7, prior to reviewing the chart below

### **Recomended Pressure** For applications requiring uniform pattern, the recommended pressure range (boom pressure) is provided. For PWM spray systems, boom

# pressure will vary from spray tip pressure.

**LEGEND** 

# **Duty Cycle**

Effective "on-time" of PWM PWM systems adjust rates by the length of time the solenoid stays open (duty cycle), in order to keep pressure constant for controlled spray quality. Duty cycle is calculated by dividing your travel speed into the max speed of the spray tip at your pressure. Min/Max operating duty cycles are 40-100%. (confirm with PWM mfg.)

### **ASABE Spray** Classification

(ASABE S572.1 Standard) Spray quality is categorized based on Dv0.1 and VMD droplet sizes by 3rd party testing from spray spectrum recording equipment Data (e.g. VMD, etc.) can vary between testing equipment and method, and is provided only as an educational resource to compare different series of Wilger spray tips.

The majority of chemical labels will require spray application relating to a spray quality, to achieve ideal efficacy and spray drift reduction.

- Fine (F) Medium (M) Coarse (C)
- Very Coarse (VC) Extremely Coarse (XC) Ultra Coarse (UC)

### VMD

(Volume Median Diameter) Size of the median droplet (in  $\mu$ ) for a sprayed volume. Half of the volume is made up of droplets smaller than VMD, with half made of droplets larger.

% <141µ (% Driftable Fines) Percentage of volume which is likely to drift. As wind conditions and boom height increase, observed snrav drift will increased substantially.

% <600μ (% Useful Droplets) Percentage of volume which is made up of 'small' droplets. As % of useful droplets lowers, coverage is reduced.



### Combo-Jet Cap Adapters

Square Lug Compatibility Combo-Jet® spray tips attach to Combo-Jet nozzle bodies. Use the #40204-00 adapater to use Combo-Jet spray tips on square lug nozzle

М	Tip	Flow	D	Spray	Opiuy	o. opoou	nungo (	iouiiuou	,	Opic	.y olu		(-	ор.	J. U.L	о р	,, ,, ,,		(2	. ,0,,	70 700	<b>υμ</b> (υ	,,,,,	Біор	,	opiu, iip	a rare no
П	Cap	Rate	Boom BAR	Tip	@ Li	tres/Hec	tare on 5	Ocm Spa	cing	EF	R110	<b>Ser</b>	ies	SF	R110	Ser	ies	MF	R110	Ser	ies	DR	110	Ser	ies	<b>Spray Tip</b>	Part #
Г	No.	L/Min		BAR	30L/Ha	50L/Ha	80L/Ha	100L/Ha	150L/Ha	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Class	VMD	<141	<600	Straine	r Part #
H		0.31	1.8	1.8	2.5-12	1.5-7	0.9-5	0.7-4	0.5-2	F	143	49%			R110-01					1 not ava			R110-01			ER110-01	40281-01
Г		0.33	2.0	2.0	2.6-13	1.6-8	1-5	0.8-4	0.5-3	F	140	50%											.,		_	2	
Н		0.35	2.3	2.3	2.8-14	1.7-8	1-5	0.8-4	0.6-3	F	137	53%						B14/8			lizard						
		0.36	2.5	2.5	2.9-15	1.7-9	1.1-5	0.9-4	0.6-3	F		54%		L	WIL						<b>p Sel</b> o ive calcı				,		
		0.39	2.8	2.8	3.1-15	1.9-9	1.2-6	0.9-5	0.6-3	F	133	56%		II J	7	T.L					(speed,						
Н	01	0.40	3.0	3.0	3.2-16	1.9-10	1.2-6	1-5	0.6-3	F	131			4	*-	*	45.0	es you	spray t	ips opti	ons that M-spec	t would	suite y	our sp	ray		
Н		0.43	3.5	3.5	3.4-17	2.1-10	1.3-6	1-5	0.7-3	F	128			<u>I</u>	PW	IZAF	SD in	It's FF	REE to	downi	oad! D	ownlo	ad it t	oday!	ie,.		
Н		0.46	4.0	4.0	3.7-18	2.2-11	1.4-7	1.1-6	0.7-4	F	125				Goo	gle pla	y Also	o availa	ble for	use @						100 Mesh	Strainer
Н		0.49	4.5	4.5	3.9-20	2.3-12	1.5-7	1.2-6	0.8-4	F	122				Down	oad on ti	IA		V	$\mathbf{v}_{I}$		1 -	D		-1	[Gre	
Н		0.52	5.0	5.0	4.1-21	2.5-12	1.5-8	1.2-6	0.8-4	Ė	120				App	Stor	e	$\Lambda''\Lambda'$	V. V		L	<u> </u>	N.	NE	: 1	4025	
Н			1.8	1.8	3.7-19	2.2-11	1.4-7	1.1-6	0.7-4	F	148	44%			_											ER110-015	
Н		0.46	2.0	2.0	3.9-20	2.3-12	1.5-7	1.1-6	0.7-4	-	145		100%	M	218	23%	98%	С	329	11%	0.49/	С	372	7%	91%	SR110-015	
ī		0.49	2.3	2.3	4.2-21	2.5-12	1.6-8	1.3-6	0.8-4	F	143			F	210			C	306			С	353	8%	93%	MR110-015	
ŀ		0.55	2.5	2.5	4.4-22	2.6-13	1.6-8	1.3-0	0.0-4		141	48% 50%		F =			98% 98%	C		13%	96%	C	342	9%	93%	DR110-015	
ŀ			2.8		4.4-22									F =	205			C	293 276	14%	97%	C	327		_	טוווס-טוו	40200-013
Н	015	0.58		2.8		2.8-14	1.7-9	1.4-7	0.9-5	-	139	52%		F	199		98%	-		16%		C			94%		
		0.60	3.0	3.0	4.8-24	2.9-14	1.8-9	1.4-7	1-5		137	53%		F	195		98%	M	267	1/%	98%	-	319		_		
		0.65	3.5	3.5	5.2-26	3.1-15	1.9-10	1.5-8	1-5	F	134	55%			187		98%	M	246	20%	99%	С	300	12%		100 Mook	Ctroiner
H		0.69	4.0	4.0	5.5-28	3.3-17	2.1-10	1.7-8	1.1-6	-	132			-	180	34%		M	230	22%		С	285		96%	100 Mesh	
H		0.73	4.5	4.5	5.9-29	3.5-18	2.2-11	1.8-9	1.2-6	F	129	59%		F	173		98%	M	216	24%	99%	C	273		_	[Gre	
H		0.77	5.0	5.0	6.2-31	3.7-19	2.3-12	1.9-9	1.2-6	-	127			г	167	37%	98%	г	205	26%	99%	M	262	16%	9/%	4025	
Н		0.61	1.8	1.8	4.9-25	2.9-15	1.8-9	1.5-7	1-5	F	165	37%		-	-	-	-	-	-	-	-	-	-	40/	- 04.0/	ER110-02	40281-02
H		0.65	2.0	2.0	5.2-26	3.1-16	1.9-10	1.6-8	1-5	F -	161	39%		M	221	22%		C	322			VC	438	4%	81%	SR110-02	40287-02
Н		0.69	2.3	2.3	5.6-28	3.3-17	2.1-10	1.7-8	1.1-6	F -		41%		-	215	24%		U C	304	13%		VC	419	5%	84%	MR110-02	40291-02
H		0.72	2.5	2.5	5.8-29	3.5-17	2.2-11	1.7-9	1.2-6	F	154		100%	F	211	25%		C	293	14%	96%	VC	407	6%	85%	DR110-02	40286-02
Н	02	0.77	2.8	2.8	6.1-31	3.7-18	2.3-11	1.8-9	1.2-6	F	151	45%		F		26%		C	279	15%		VC	392	7%	87%		
Н		0.79	3.0	2.9	6.3-32	3.8-19	2.4-12	1.9-10	1.3-6	F	148		100%	F	203	27%		С	271			С	383	7%	88%		
H		0.86	3.5	3.4	6.9-34	4.1-21	2.6-13	2.1-10	1.4-7	F	144		100%	F	196		99%	M	254	19%	97%	С	361	8%	90%		
П		0.92	4.0	3.9	7.3-37	4.4-22	2.7-14	2.2-11	1.5-7	F	139	52%		F		30%		M	240	20%		С	343	9%	91%	50 Mesh	
1		0.97	4.5	4.4	7.8-39	4.7-23	2.9-15	2.3-12	1.6-8	F	136	54%		F	185	32%		M		22%	98%	С	327	10%		[Bli	
Н		1.02	5.0	4.9	8.2-41	4.9-25	3.1-15	2.5-12	1.6-8	F	132			F	180	33%	99%	M	218	23%	98%	С	313	10%	93%	4025	
Н		0.76	1.8	1.8	6.1-31	3.7-18	2.3-11	1.8-9	1.2-6	F	189		100%	-	-	-	-	-	-	-	-	-	-	-	-	ER110-025	
H		0.81	2.0	1.9	6.4-32	3.9-19	2.4-12	1.9-10	1.3-6	F	187	29%		M	239		98%	С	356	8%	90%	VC	441	4%	78%	SR110-025	
Н		0.86	2.3	2.2	6.9-35	4.1-21	2.6-13	2.1-10	1.4-7	F	185	29%	100%	M	232	20%	98%	С	342	9%	91%	VC	423	5%	82%	MR110-025	
1		0.90	2.5	2.4	7.2-36	4.3-22	2.7-14	2.2-11	1.4-7	F	183		100%	M	228	21%		С	333	10%	92%	VC	413	6%	84%	DR110-025	40286-025
H	025	0.95	2.8	2.7	7.6-38	4.6-23	2.9-14	2.3-11	1.5-8	F	181	30%	100%	M	222		98%	С	321	11%	93%	VC	399	6%	86%		
Н		0.99	3.0	2.9	7.9-39	4.7-24	3-15	2.4-12	1.6-8	F	179	30%	100%	M	219	23%	98%	С	314	12%	94%	С	390	7%	87%		
Н		1.07	3.5	3.4	8.5-43	5.1-26	3.2-16	2.6-13	1.7-9	F	177	30%	100%	F	212	25%	98%	С	297	13%	95%	С	371	8%	89%		
Ц		1.14	4.0	3.9	9.1-46	5.5-27	3.4-17	2.7-14	1.8-9	F	174	31%	100%	F	205		98%	С	283	15%	95%	С	354	9%	91%	50 Mesh	Strainer
П		1.21	4.5	4.4	9.7-48	5.8-29	3.6-18	2.9-15	1.9-10	F	172	31%	100%	F	200	28%	98%	M	271	16%	96%	С	340	9%	92%	[Bli	
Ц		1.27	5.0	4.9	10.2-51	6.1-31	3.8-19	3.1-15	2-10	F	170	31%	100%	F	195	29%	98%	M	260	17%	97%	С	327	10%	93%	4025	0-00
l.		0.91	1.8	1.7	7.3-37	4.4-22	2.7-14	2.2-11	1.5-7	F	190	29%	99%	-	-	-	-	-	-	-	-	-	-	-	-	ER110-03	40281-03
Į.		0.96	2.0	1.9	7.7-38	4.6-23	2.9-14	2.3-12	1.5-8	F	186	30%	99%	С	309	11%	94%	VC	403	6%	85%	XC	488	3%	72%	SR110-03	40287-03
П		1.03	2.3	2.2	8.3-41	5-25	3.1-15	2.5-12	1.7-8	F	181	32%	98%	C	297	12%	95%	C	386	7%	88%	XC	470	4%	75%	MR110-03	40291-03
П		1.08	2.5	2.4	8.6-43	5.2-26	3.2-16	2.6-13	1.7-9	F	178	33%	98%	C	290	13%	95%	С	376	8%	89%	XC	460	4%	77%	DR110-03	40286-03
П	03	1.14	2.8	2.7	9.1-46	5.5-27	3.4-17	2.7-14	1.8-9	F	174	34%	98%	C	281	14%	96%				90%						
Ш	03	1.18	3.0	2.9	9.4-47	5.7-28	3.5-18	2.8-14	1.9-9	F	172	35%	98%	C	275	15%	96%	C	354	9%	91%	VC	437	5%	81%		
		1.27	3.5	3.4	10.2-51	6.1-31	3.8-19	3.1-15	2-10	F	166	37%	98%	M	262	17%	97%	C	335	10%	93%	VC	417	6%	84%		
		1.36	4.0	3.9	10.9-54	6.5-33	4.1-20	3.3-16	2.2-11	F			97%	_			97%	_			94%	_				50 Mesh	Strainer
		1.44	4.5	4.3	11.5-58	6.9-35	4.3-22	3.5-17	2.3-12	F	157	40%	97%	M	240	20%	97%	C	305	12%	95%	С	385	7%	87%	[Bli	ne]
		1.52	5.0	4.8	12.2-61	7.3-37	4.6-23	3.7-18	2.4-12	F	153	41%	97%	M	231	21%	98%	C	292	13%	95%	C	372	7%	88%	4025	0-00
_			_																		_						

Sprayer Speed Range (Rounded KM/H) Spray Class.; VMD (Droplet Size in μ); %<141μ (Drift %); %<600μ (Small Droplets) Spray Tip & Part No.

# Multi-tip & Multi-angle Spraying - Which to use When?

Using multiple spray tips at the same time can provide substantial gains in effective coverage into crops or applications that otherwise would be very difficult to cover; however, multi-tip spraying should not be used without reason.

Spraying high volume out of a single tip can produce droplets that are 'too large" to be effective for coverage, which make for ineffective spray application. For improved application on herbicide resistant or problem weeds (like Pigweed -

Palmer Amaranth), consider using COMBO-RATE® stacking nozzle bodies [right] to maximize canopy penetration & coverage; and try our dual-tip adapter [left] for applications on a vertical target like fungicide on a head of wheat.

For an example, if you are targeting a medium spray quality (e.g. VMD of 275µ), applying 100L/Ha at 32KPH, you might be forced to use a ER110-125, which would produce a ~366µ VMD. Instead, split up the volume into two SR110-06 spray tips, which will allow better drift control (options to use an MR110-06), and get better control of coverage (~300µ VMD) as well.

Studies show using a coarser & finer spray at the same time is also useful in canopy applications.





Very Fine

60-105µ

Fine

106-235µ

Medium

236-340μ

Coarse

341-403µ

■ Extremely Fine

<60µ

# 110° COMBO-JET® Spray Tips Charts For PWM Sprayers

Nozzle Spacing: 50cm Application Units: Litres/Hectare



Disclaimer: These charts are published for comparative purposes to demonstrate the differences in the series of Combo-Jet® spray tips. Data used to populate this chart is extrapolated from third party testing data from a controlled conditions test with water as the testing solution. Actual spray applications with active chemical ingredients may change the spray dynamics and spray tip performance specifications. Wilger is not liable for any misuse or misrepresentation of this information, leading to (but not limited to) incorrect spray application, crop damage, or any other harm (Not limited to human, livestock or environmental).

	Eleve			Spraye	r Speed R	ange (Roun	nded KM/H)		S	pray C	lass	ificat	ion; V	/MD (I	Drople	t Siz	e in µ	ı); %<	:141µ	ı (Drif	t %);	<b>%&lt;6</b>	00µ (9	Small Droplets)	Spray Tip 8	& Part I
p p	Flow Rate	Boom	Spray Tip	@ Litres	/Hectare	on 50cm	Snacing	FF	R110	Seri	es	SF	110	Seri	ies	MR	1110	Ser	ies	DR	110	Ser	ies	UR110 Series	Spray Tip	Part :
۲ ).	L/Min	BAR	BAR																							
-	1.20	1.8	1.7	5.8-29	2.9-14	1.9-10	<b>200L/Ha</b>	M		20%		Class	- VIVID	<141	<000	-	- VIVID	<141	<000	-	VIVID	<141	<000	Class UR Tip Usage	Strainer r ER110-04	40281
ŀ	1.26	2.0	1.7	6.1-30	3-15	2-10	1.5-8	M		21%		С		10%		VC	429		82%		524	3%	66%	UC		40287
ŀ	1.36	2.3	2.2	6.5-33	3.3-16	2.2-11	1.6-8	M		22%		C		11%		VC	410	5%	85%	XC	504	3%	70%	UR tips are specialty		40291
	1.41	2.5	2.3	6.8-34	3.4-17	2.3-11	1.7-8	M		23%				12%		VC	399		87%		492	4%	72%	spray tips to produce		40286
	1.50	2.8	2.6	7.2-36	3.6-18	2.4-12	1.8-9	M		24%		C		13%		C	384	6%	89%	XC	476		74%	ultra coarse spray.  Refer to chemical		40292
	1.55	3.0	2.8	7.4-37	3.7-19	2.5-12	1.9-9	F		24%				14%		C	374		90%		467	4%	76%	application label	011110-04	40232
ŀ	1.67	3.5	3.3	8-40	4-20	2.7-13	2-10	F		26%			273			C	353	8%	92%	VC	445	5%	79%	for maximum pressures, speeds		
ŀ	1.79	4.0	3.7	8.6-43	4.3-21	2.9-14	2.1-11	F		27%		M		17%		C	335		93%		426	5%	81%	and application information.		
ŀ	1.90	4.5	4.2	9.1-46	4.6-23	3-15	2.3-11	F	199	28%		M	251	18%		C		10%		VC	410	6%	83%	UC	50 Mesh Str	ainer [
ŀ	2.00	5.0	4.7	9.6-48	4.8-24	3.2-16	2.4-12	F		29%		_		19%		C		10%			395		85%	UC	4025	_
i	1.58	2.0	1.9	7.6-38	3.8-19	2.5-13	1.9-9	М		21%		-	-	-	-	-	-	-	-	-	-	-	-		ER110-05	
ŀ	1.70	2.3	2.2	8.1-41	4.1-20	2.7-14	2-10	М	-	23%		С	351	9%	92%	XC	480	4%	73%	XC	526	2%	64%	UC		4028
ŀ	1.77	2.5	2.3	8.5-42	4.2-21	2.8-14	2.1-11	М		24%		C	341		92%	XC	468		75%		519		65%	UR tips are specialty spray tips to produce	-	4029
ŀ	1.87	2.8	2.6	9-45	4.5-22	3-15	2.2-11	F		25%						XC	452		77%		508		67%	ultra coarse spray.		4028
ŀ	1.94	3.0	2.8	9.3-46	4.6-23	3.1-15	2.3-12	F		26%				11%		VC	442		78%		502		68%	Refer to chemical application label	UR110-05	
j	2.09	3.5	3.3	10-50	5-25	3.3-17	2.5-13	F		28%		_		13%		VC	419		81%		487		71%	for maximum		
١	2.24	4.0	3.7	10.7-54	5.4-27	3.6-18	2.7-13	F		29%				14%		VC	400	6%	83%		475		73%	uc and application		
١	2.37	4.5	4.2	11.4-57	5.7-28	3.8-19	2.8-14	F		30%				15%		C	383		85%		464		74%	uc information.	50 Mesh Str	ainer
j	2.50	5.0	4.7	12-60	6-30	4-20	3-15	F		32%		M		16%		C	368	7%	86%	VC	454		76%	UC	4025	
ĺ	1.83	2.0	1.7	8.8-44	4.4-22	2.9-15	2.2-11	М		16%		-	-	-	-	-	-	-	-	-	-	-	-	-		4028
ı	1.96	2.3	2.0	9.4-47	4.7-24	3.1-16	2.4-12	M		17%		VC	421	6%	83%	XC	511	3%	67%	XC	569	2%	56%	UC	SR110-06	4028
ı	2.04	2.5	2.2	9.8-49	4.9-25	3.3-16	2.5-12	М	258	18%	94%	VC	408	6%	85%	XC	502	3%	69%	XC	559	2%	58%	UR tips are specialty spray tips to produce	MR110-06	4029
ı	2.16	2.8	2.4	10.4-52	5.2-26	3.5-17	2.6-13	М	253	19%	94%	С	391	7%	87%	XC	489	4%	71%	XC	545	2%	61%	ultra coarse spray.	DR110-06	4028
ı	2.24	3.0	2.6	10.7-54	5.4-27	3.6-18	2.7-13	M	249	20%	94%	С	380	8%	88%	XC	481	4%	73%	XC	536	2%	63%	Refer to chemical application label	UR110-06	4029
ı	2.42	2 3.5 8 4.0	3.0	11.6-58	5.8-29	3.9-19	2.9-15	М	241	21%	95%	С	356	9%	90%	XC	463		76%		517		66%	for maximum pressures, speeds		
ı	2.58	4.0	3.5	12.4-62	6.2-31	4.1-21	3.1-16	М	234	22%	95%	С	335	10%	92%	VC	447	4%	78%	XC	500	3%	68%	UC and application		
ı	2.74	4.5	3.9	13.2-66	6.6-33	4.4-22	3.3-16	М	228	23%	95%	С	317	11%	93%	VC	434	5%	80%	XC	485	3%	70%	UC information.	50 Mesh Str	ainer
ı	2.89	5.0	4.3	13.9-69	6.9-35	4.6-23	3.5-17	M	223	24%	95%	С	301	12%	94%	VC	422	5%	82%	XC	472	3%	72%	UC	40250	0-00
	2.32	2.0	1.6	11.1-56	5.6-28	3.7-19	2.8-14	M	324	14%	91%	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-08	4028
	2.49	2.3	1.8	12-60	6-30	4-20	3-15	M	315	15%	92%	-	-	-	-	-	-	-	-	-	-	-	-	- UD time are appoint.	SR110-08	4028
	2.60	2.5	2.0	12.5-62	6.2-31	4.2-21	3.1-16	F	302	16%	92%	С	473	5%	63%	XC	553	4%	48%	UC	622	3%	39%	UR tips are specialty spray tips to produce	MR110-08	4029
	2.75	2.8	2.2	13.2-66	6.6-33	4.4-22	3.3-16	F	295	17%	93%	C	460	6%	65%	XC	539	4%	51%	UC	604	3%	42%	ultra coarse spray.  Refer to chemical	DR110-08	4028
	2.84	3.0	2.4	13.7-68	6.8-34	4.6-23	3.4-17	F	284	18%	94%	C	442	6%	69%	XC	520	4%	55%	UC	593	3%	44%	UC application label	UR110-08	4029
	3.07	3.5	2.8	14.7-74	7.4-37	4.9-25	3.7-18	F	278	19%	94%	C	432	7%	70%	XC	509	5%	57%	UC	569	4%	47%	for maximum pressures, speeds		
	3.28	4.0	3.2	15.8-79	7.9-39	5.3-26	3.9-20	F	264	20%	95%	C	408	7%	74%	XC	483	5%	61%	UC	548	4%	50%	and application information.		
	3.48	4.5	3.6	16.7-84	8.4-42	5.6-28	4.2-21	F	252	21%	95%	C	388	8%	77%	XC	461	6%	65%	UC	530	4%	52%	UC IIIIOIIIation.		
	3.67	5.0	3.9	17.6-88	8.8-44	5.9-29	4.4-22	F	241	22%	96%	C	369	9%	79%	VC	441	6%	67%	UC	513	4%	54%	UC		
	2.94	2.3	1.6	14.1-71	7.1-35	4.7-24	3.5-18	M	347	12%	89%	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-10	
	3.07	2.5	1.8	14.7-74	7.4-37	4.9-25	3.7-18	M	339	12%	90%	-	-	-	-	-	-	-	-	-	-	-	-	UR tips are specialty spray tips to produce	SR110-10	
	3.25	2.8	2.0	15.6-78	7.8-39	5.2-26	3.9-19	M	329	14%	90%	C	478	6%	61%	XC	530	4%	52%	UC	678	3%	31%	ultra coarse spray.	MR110-10	
	3.36	3.0	2.1	16.1-81	8.1-40	5.4-27	4-20	M	322	14%	91%	С	467	6%	63%	XC	520	4%	53%	UC	669	3%	33%	Refer to chemical application label	DR110-10	
	3.63	3.5	2.5	17.4-87	8.7-44	5.8-29	4.4-22	M	308	16%	91%	С	442	7%	67%	XC	495	5%	57%	UC	649	3%	35%	for maximum	UR110-10	
	3.88	4.0	2.8	18.6-93	9.3-47	6.2-31	4.7-23	F	296	17%	92%	С	420	8%	71%	XC	474	5%	60%	UC	632	3%	37%	pressures, speeds and application		
	4.12	4.5		19.8-99	9.9-49	6.6-33	4.9-25	F		18%		_		8%						_			39%	UC information.		
	4.34	5.0	3.5			6.9-35	5.2-26	F		19%		C	384	9%	76%	VC	438	6%	65%	UC	603	4%	40%	UC		
	3.41		1.4	16.4-82	8.2-41	5.5-27	4.1-20	С		9%		-	-	-	-	-	-	-	-	-	-	-	-		ER110-125	
1	3.55	2.5	1.5	17.1-85	8.5-43	5.7-28	4.3-21	С		9%		-	-	-	-	-	-	-	-	-	-	-	-		SR110-125	
1	3.76	2.8	1.7	18-90	9-45	6-30	4.5-23	С		9%		-	-	-	-	·	-	-	-	-	-	-	-	UR series spray tips	MR110-125	
ĺ	3.89	3.0	1.8	18.7-93	9.3-47	6.2-31	4.7-23	С		10%			492		58%	UC	638	4%	36%	-	-	-	-	are currently	DR110-125	40286
۱	4.20	3.5		20.2-101		6.7-34	5-25	С		10%				5%			614			=	645			commercially available in -04 to -10 sizes.		
ĺ	4.49	4.0		21.6-108		7.2-36	5.4-27	С	_	11%			444				592		44%	=			37%	111 07 10 10 31263.		
	4.77	4.5		22.9-114		7.6-38	5.7-29	M		11%				6%						UC						
	5.02	5.0		24.1-121		8-40	6-30	M		12%				6%	72%	XC	556		49%	UC	606	4%	40%			
1	4.16	2.8		20-100	10-50	6.7-33	5-25	С		9%		-	-	-	-	-	-	-	-	-	-	-	-		ER110-15	
	4.31	3.0	1.5	20.7-103	10.3-52	6.9-34	5.2-26	С	426	-		-	-	-	-	-	-	-	-	-	-	-	-		SR110-15	
ĺ	4.66	3.5		22.4-112		7.5-37	5.6-28	С		10%					46%	-	-	-	-	-	-	-	-	UR series spray tips	MR110-15	
	4.98	4.0	2.1	23.9-119		8-40	6-30	С		10%					51%		608		40%	_	660			are currently commercially available	DR110-15	
	5.28	4.5				8.4-42	6.3-32	С		11%				5%									42%	in -04 to -10 sizes.		
1	5.57	5.0		26.7-134		8.9-45	6.7-33	M		12%				5%		XC	582		44%				44%			
	5.84	5.5	2.8	28-140	14-70	9.3-47	7-35	M	367	12%	76%	C	491	6%	59%	XC:	571	5%	46%	II (C	621	4%	46%			

■ Very Coarse

404-502µ

☐ Extremely Coarse

■ Ultra Coarse



# Looking for an Easier Way to Choose Spray Tips?

Tip Wizard is a interactive spray tip selection tool, that takes your known application information, and provides you with real actionable information that will help make the best choice of spray tip for your field. It is available on the wilger net website, as well as downloadable for any smartphone device or tablet.

Don't wait until it is too late. Try it today!





# Drift vs. Efficacy

Generally speaking, smaller droplets deposit on the target more effectively than larger droplets, but larger droplets will drift less. So, when balancing drift control and efficacy, ensure to follow chemical labels and quidelines to designate the required droplet size/category.

ASABE S-572.1 Classification Category	Color Code	Estimated VMD Range for Spray Quality	Contact Insecticide & Fungicide	Systemic Insecticide & Fungicide	Contact Foliar Herbicide	Systemic Foliar Herbicide	Soil-Applied Herbicide	Incorporated Soil-Applied Herbicide	Fertilizer
Extremely Fine (XF)	Purple	Under 60							
Very Fine (VF)	Red	60-105							
Fine (F)	Orange	106-235							
Medium (M)	Yellow	236-340			e.g. Glufisonate*				
Coarse (C)	Blue	341-403				e.g. Glyphosate*			
Very Coarse (VC)	Green	404-502				e.g. 2,4D Amine*			
Extremely Coarse (XC)	White	503-665							
Ultra Coarse (UC)	Black	Over 665				e.g. Restricted use Dicamba*			

The above table provides general reference between droplet size/spray quality in many modes of applications. Listed chemical examples are for example only, and may not reflect your chemical label. ALWAYS ENSURE TO FOLLOW THE MOST RECENT CHEMICAL LABEL BEFORE APPLICATION.

# **Critical Importance of Spray Tip Maintenance & Proper Performance**

Often, it is easy to dismiss considering replacing worn spray tips, as the pattern "still looks good" visually; but, what you often can't see can be creating a nasty mess of weed resistance due to misses or underapplication, or crop damage due to overapplication. Spray tips need to be considered the most important piece of the sprayer, as all results rely on their ability to do their job consistently.

# **Test Tip Flow Consistency**

Flow should be within 10% of manufacturer's listed flow. (e.g. 110-04 is 0.4 US gpm @ 40PSI) Make testing a habit.

# **Check Spray Pattern**

Pattern should be opened up fully. Verify against a pattern check sheet. Ensure clean orifice.

A little debris makes a difference.

# Verify & Calibrate Boom Height

Using the correct spray tip angle for your typical boom height is paramount. With a boom too high or too low, the droplet deposition at your target is not consistent.

Even overlap and spray deposition is crucial.

# **COMBO-JET® Fertilizer Streamer Tips**



# **COMBO-JET® Nozzle Bodies**



**COMBO-RATE®** Stacking **Nozzle Bodies** 





**O-ring Seal (ORS)** 

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Wilger **Boom End Flush Valves** 



**Visual Ball Flow Indicators** 



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