Supplementary Material

Supplementary Tables

Table S1 The values of all input and the corresponding output for all pressure and nozzle types

Spray liquid	Nozzle type	Structural parameters	150kPa	200kPa	250kPa	300kPa	350kPa	400kPa
Water	LU120-03	Breakup length(mm)	48.96	47.31	44.98	41.71	41.58	39.05
		Sheat area (mm^2)	1821.25	1640.14	1526.82	1389.28	1329.76	1246.84
		Spray angle (°)	81.6	93.2	106.9	123.8	131.7	133.5
		the average number of perforations	0.94	1.14	1.22	1.31	1.42	1.44
		the average area of perforations (mm^2)	26.93	19.3	18.17	16.03	15.7	15.24
	LU120-015	Breakup length(mm)	36.2	33.99	33.12	31.26	30.13	29.61
		Sheat area (mm^2)	806.9	804.3	772.06	710.66	681.98	661.07
		Spray angle (°)	65.2	77.2	97.2	114.9	119.2	124.3
		the average number of perforations	0.34	0.49	0.65	0.67	0.91	0.92
		the average area of perforations (mm^2)	12.77	12.08	11.68	11.57	11.43	11.28

Table S1, Continued

Spray liquid	Nozzle type	Structural parameters	150kPa	200kPa	250kPa	300kPa	350kPa	400kPa
Water	IDK120-03	Breakup length(mm)	26.76	29.18	29.65	28.77	28.29	27.72
		Sheat area (mm^2)	486.78	576.27	593.43	597.76	600.73	605.44
		Spray angle (°)	90.9	101	104.5	106.6	108.7	112.8
		the average number of perforations	5.80	6.82	8.79	8.59	9.93	10.10
		the average area of perforations (mm^2)	12.75	12.32	12.09	12.03	10.51	10.25
	IDK120-015	Breakup length(mm)	17.82	27.56	29.21	27.51	27.34	27
		Sheat area (mm^2)	331.63	419.57	425.65	449.68	460.84	468.3
		Spray angle (°)	85.5	91.4	98.3	104.3	107.1	111.1
		the average number of perforations	2.4	2.95	3.2	3.89	4.69	5.6
		the average area of perforations (mm^2)	15.74	14.57	14.24	12.46	11.85	11.33

Table S1, Continued

Spray liquid	Nozzle type	Structural parameters	150kPa	200kPa	250kPa	300kPa	350kPa	400kPa
Solution with 0.01‰ silicone adjuvant	LU120-03	Breakup length(mm)	39.37	37.09	34.76	32.84	32.11	31.42
		Sheat area (mm^2)	1517.47	1394.77	1292.79	1216.17	1148.96	1088.19
		Spray angle (°)	86.5	94.7	114.6	120.3	126.1	127.3
		the average number of perforations	2.81	2.95	2.98	3.08	3.21	3.33
		the average area of perforations (mm^2)	16.277	14.588	13.29	12.66	12.29	11.99
	LU120-015	Breakup length(mm)	32.55	30.68	29.67	28.47	27.87	25.75
		Sheat area (mm^2)	775.43	695.91	678.53	657.23	629.16	591.85
		Spray angle (°)	77.43	91.6	104.9	109.9	113.5	118.2
		the average number of perforations	2	2.24	2.38	2.6	2.84	2.93
		the average area of perforations (mm^2)	12.58	11.07	10.55	10.35	10.18	10.09

Table S1, Continued

Spray liquid	Nozzle type	Structural parameters	150kPa	200kPa	250kPa	300kPa	350kPa	400kPa
Solution with 0.01‰ silicone adjuvant	LU120-03	Breakup length(mm)	25.99	26.55	27.12	26.98	26.88	26.5
		Sheat area (mm^2)	538.75	549.4	563.74	572.87	581.79	589.86
		Spray angle (°)	89	93.8	101.6	105.3	108.2	111.1
		the average number of perforations	6.02	7.58	9.32	10.64	11.3	11.97
		the average area of perforations (mm^2)	12.05	11.6	10.82	10.64	9.892	9.811
	LU120-015	Breakup length(mm)	21.32	22.53	22.84	22.4	22.26	21.86
		Sheat area (mm^2)	310.97	330.58	365.448	378.028	396.949	405.93
		Spray angle (°)	68.8	79.3	96	101.5	106.7	109
		the average number of perforations	2.64	3.69	4.51	5.07	5.97	6.59
		the average area of perforations (mm^2)	10.64	10.25	9.61	9.15	8.69	8.19