

**Supporting Information for**

**Effects of Dosage and Spraying Volume on**

**Efficacy of Cotton Defoliant by Plant**

**Protection Unmanned Aerial Vehicles**

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Table S1 Weather conditions during the test period (Shihezi, China)

Date	Maximum temperature (°C)	Minimum temperature (°C)	Weather (day)	Weather (night)	Wind
2017/9/5	33	13	Sunny	Sunny	Breeze
2017/9/6	32	17	Cloudy	Cloudy	Breeze
2017/9/7	32	15	Cloudy	Light rain	Breeze
2017/9/8	27	14	Cloudy	Cloudy	Breeze
2017/9/9	27	12	Cloudy	Cloudy	Breeze
2017/9/10	28	13	Cloudy	Cloudy	Breeze
2017/9/11	28	12	Cloudy	Cloudy	Breeze
2017/9/12	26	12	Cloudy	Light rain	Breeze
2017/9/13	22	12	Cloudy	Overcast	Westerly 3-4
2017/9/14	23	7	Cloudy	Sunny	Breeze
2017/9/15	25	10	Sunny	Sunny	Breeze
2017/9/16	27	9	Sunny	Sunny	Breeze
2017/9/17	29	9	Sunny	Sunny	Breeze
2017/9/18	30	10	Sunny	Sunny	Breeze
2017/9/19	31	10	Sunny	Sunny	Breeze
2017/9/20	26	8	Sunny	Cloudy	Breeze
2017/9/21	26	8	Sunny	Sunny	Breeze
2017/9/22	27	8	Sunny	Sunny	Breeze
2017/9/23	27	9	Sunny	Sunny	Breeze
2017/9/24	11	2	Light rain	Cloudy	Westerly 3-4

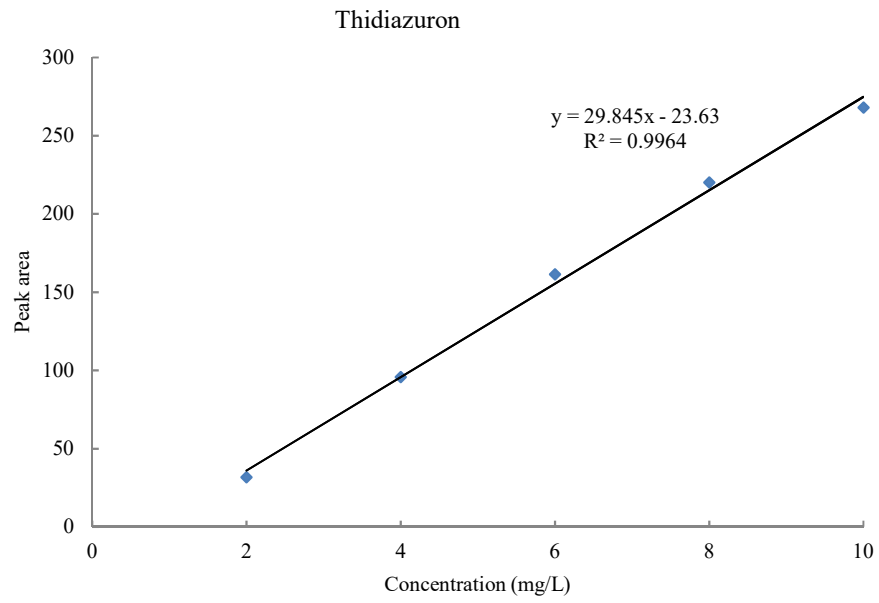


Figure S1 The standard curve of thidiazuron.

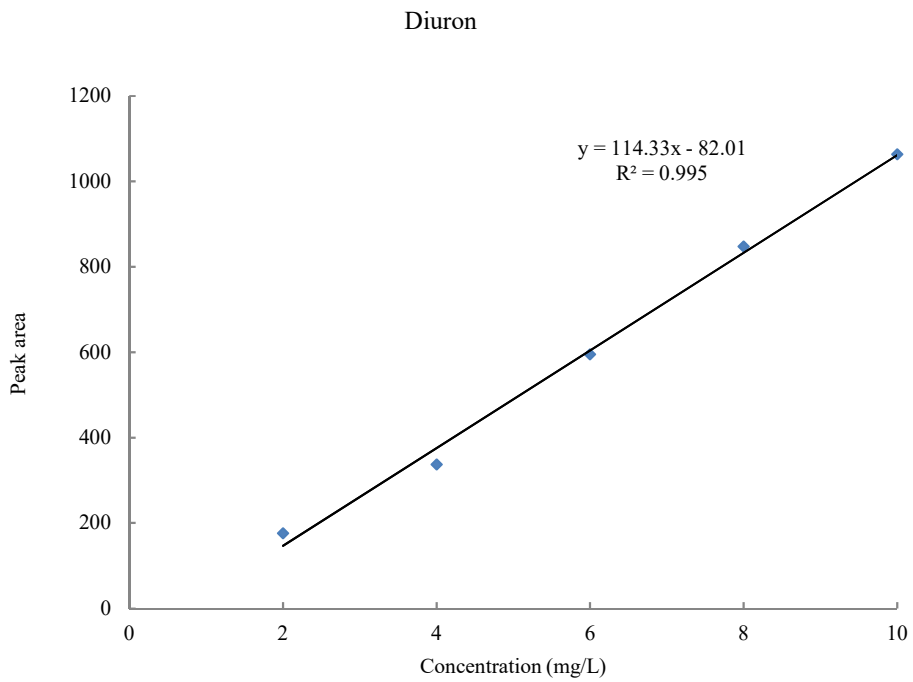


Figure S2 The standard curve of diuron.

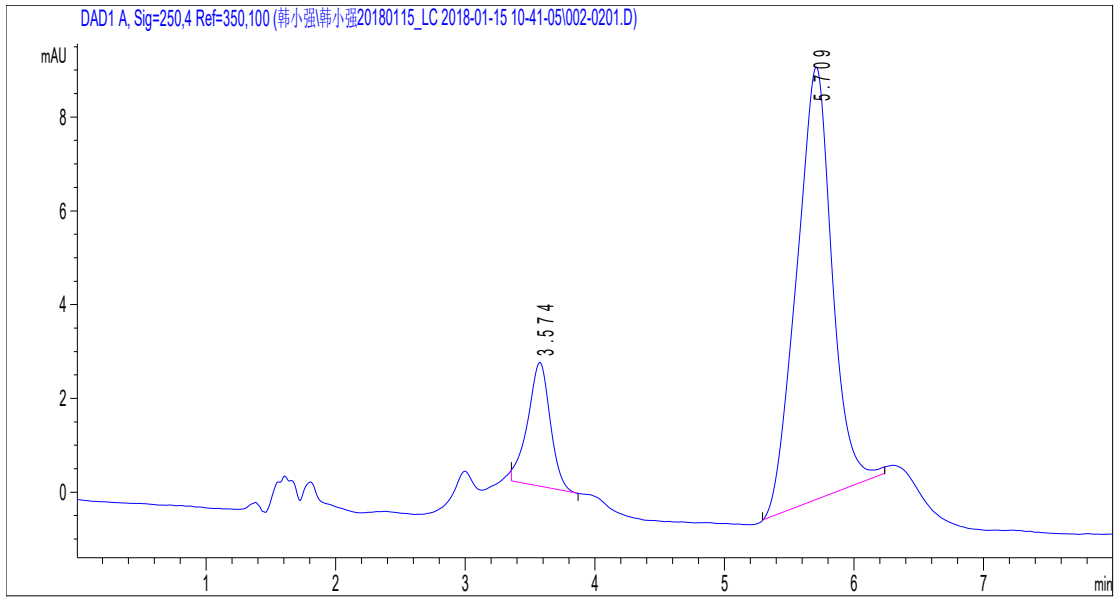


Figure S3 The standard curve of thidiazuron and diuron (2mg/L)

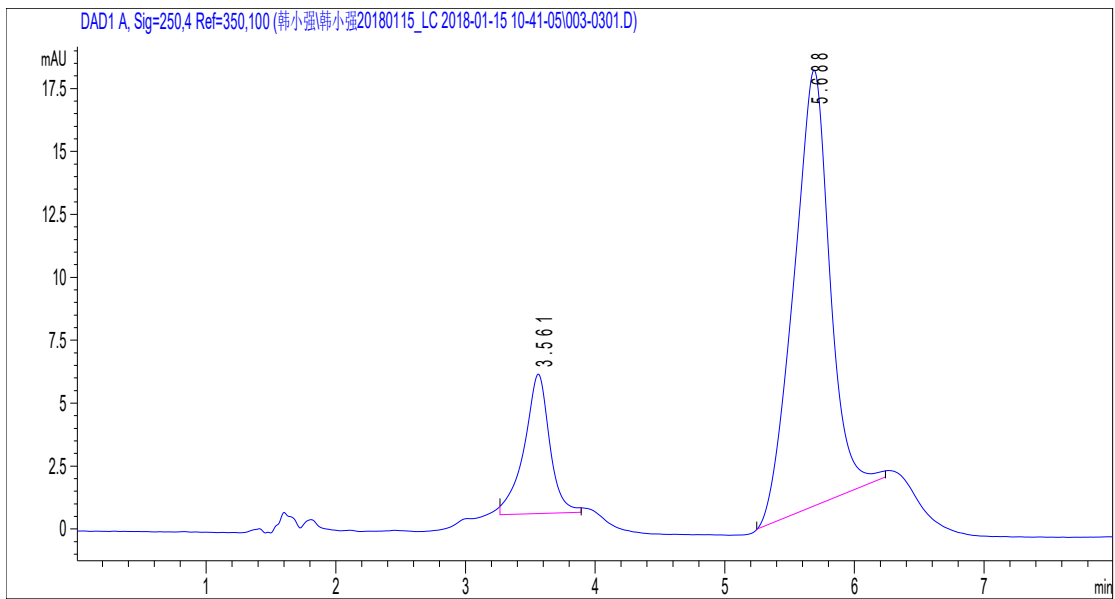


Figure S4 The standard curve of thidiazuron and diuron (4mg/L)

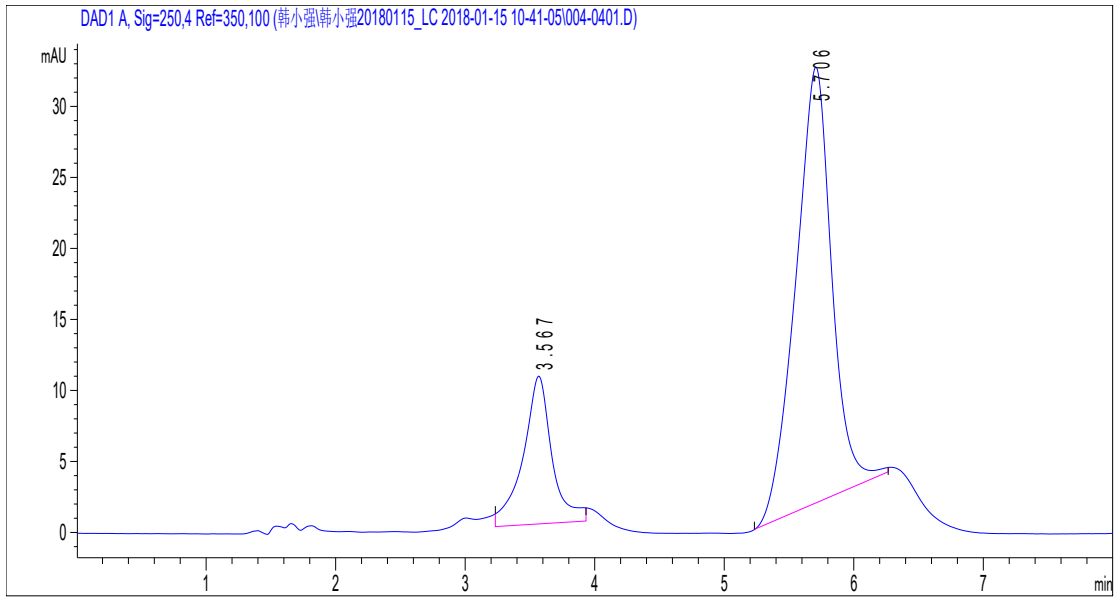


Figure S5 The standard curve of thidiazuron and diuron (6 mg/L)

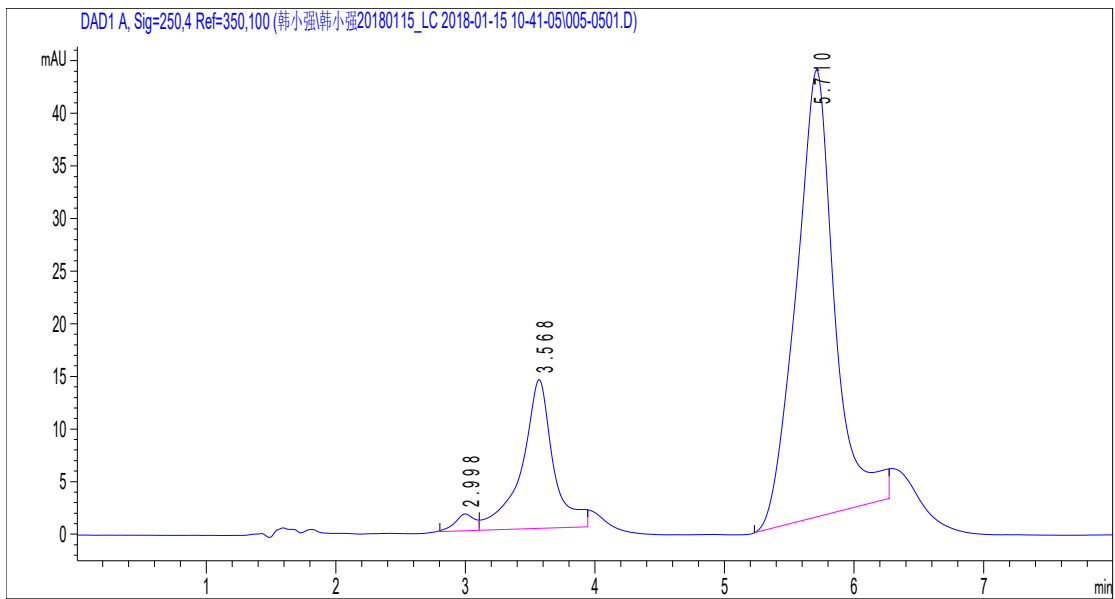


Figure S6 The standard curve of thidiazuron and diuron (8 mg/L)

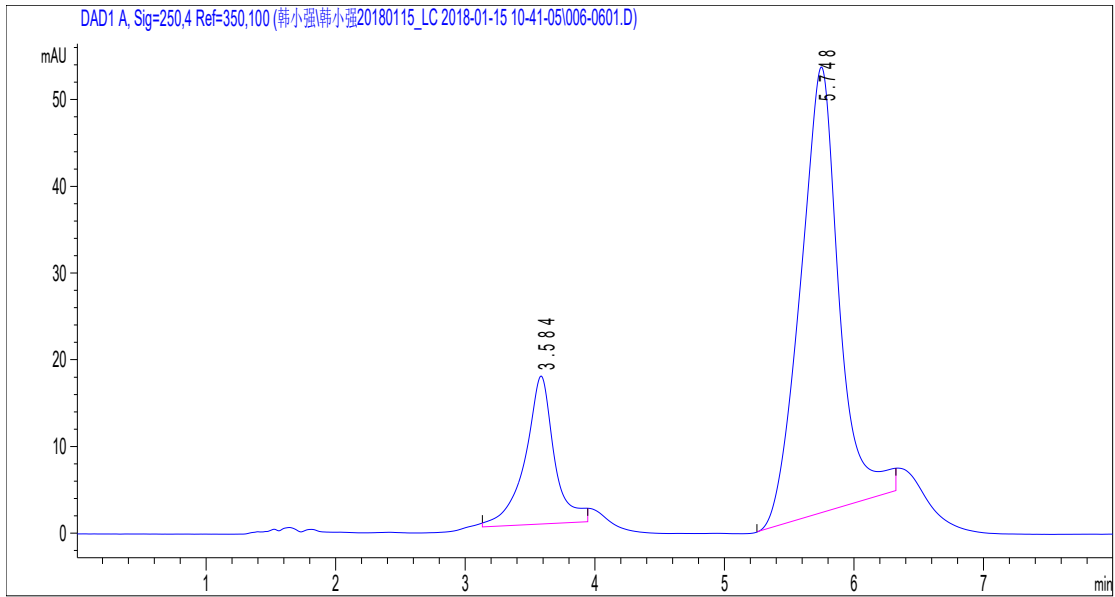


Figure S7 The standard curve of thidiazuron and diuron (10 mg/L)

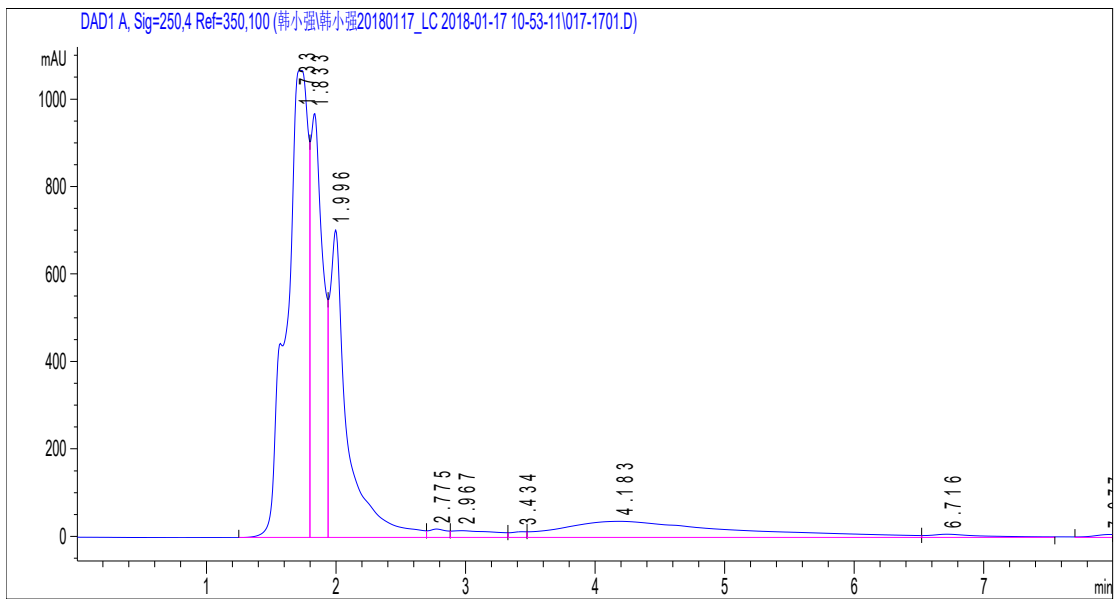


Figure S8 Sample added recovery (thidiazuron and diuron, 0.05mg/L, 1)

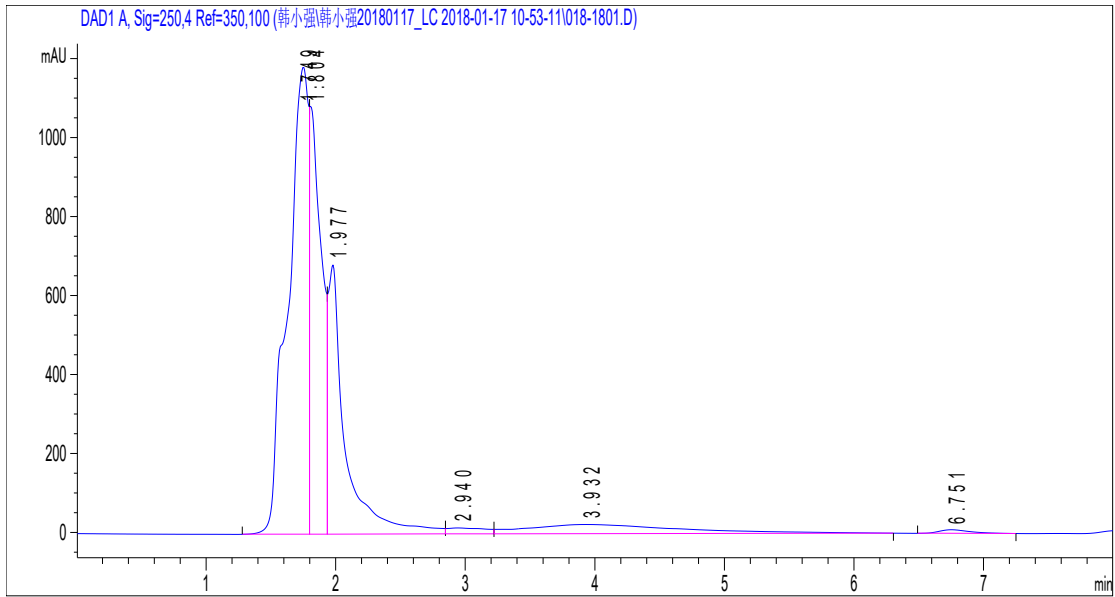


Figure S9 Sample added recovery (thidiazuron and diuron, 0.05mg/L, 2)

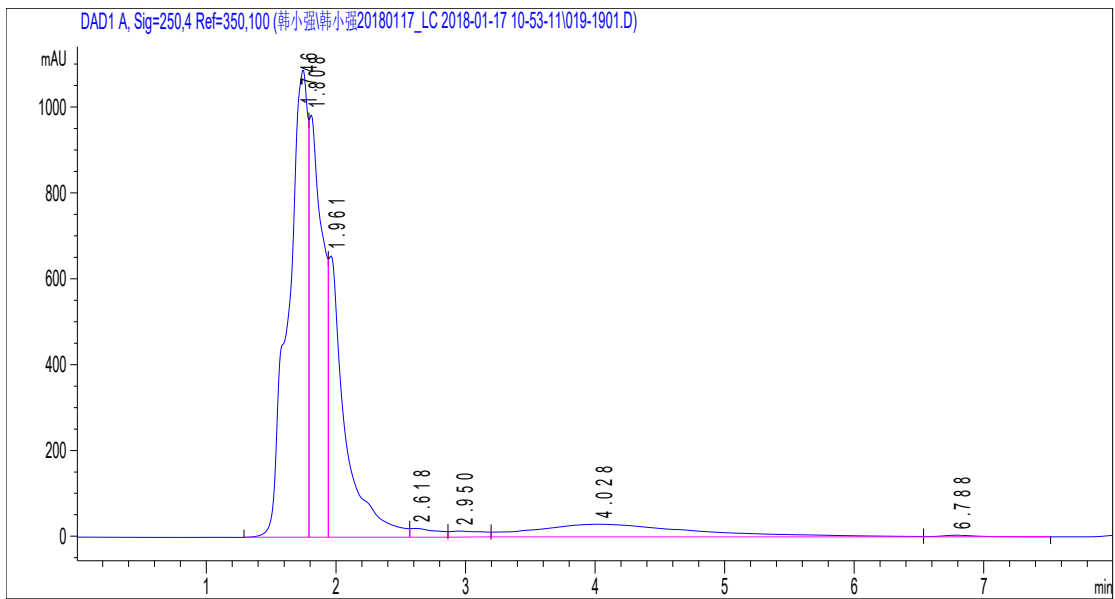


Figure S10 Sample added recovery (thidiazuron and diuron, 0.05mg/L, 3)

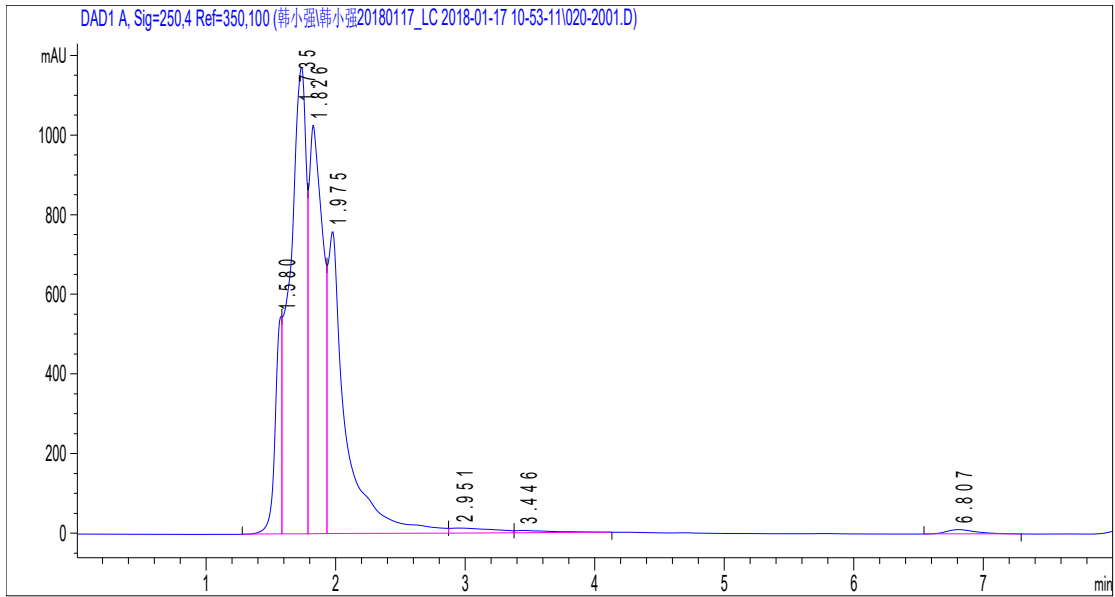


Figure S11 Sample added recovery (thidiazuron and diuron, 0.5mg/L, 1)

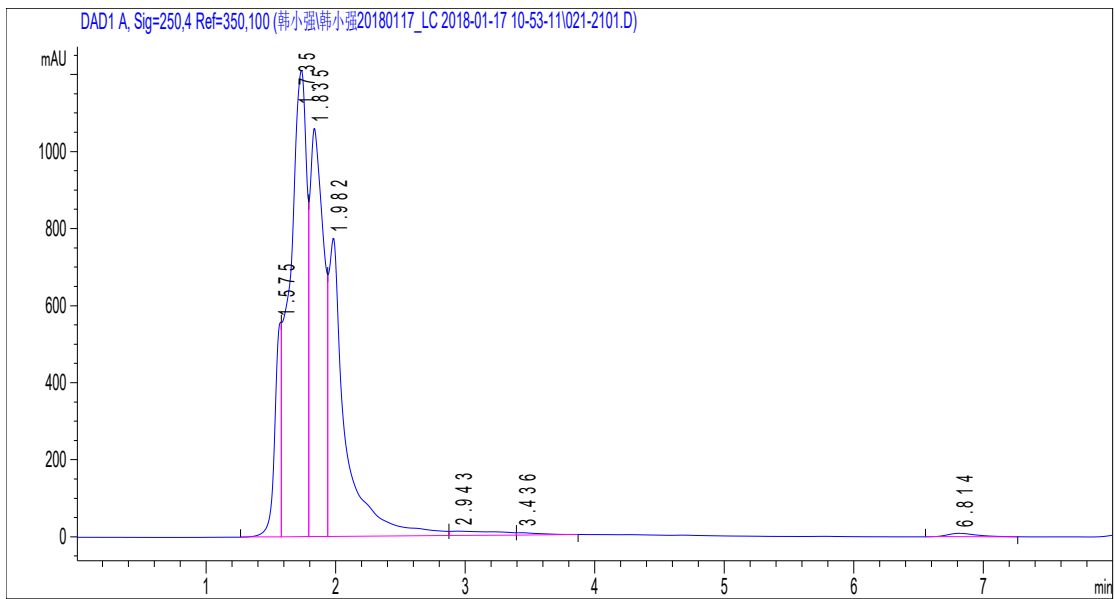


Figure S12 Sample added recovery (thidiazuron and diuron, 0.5mg/L, 2)



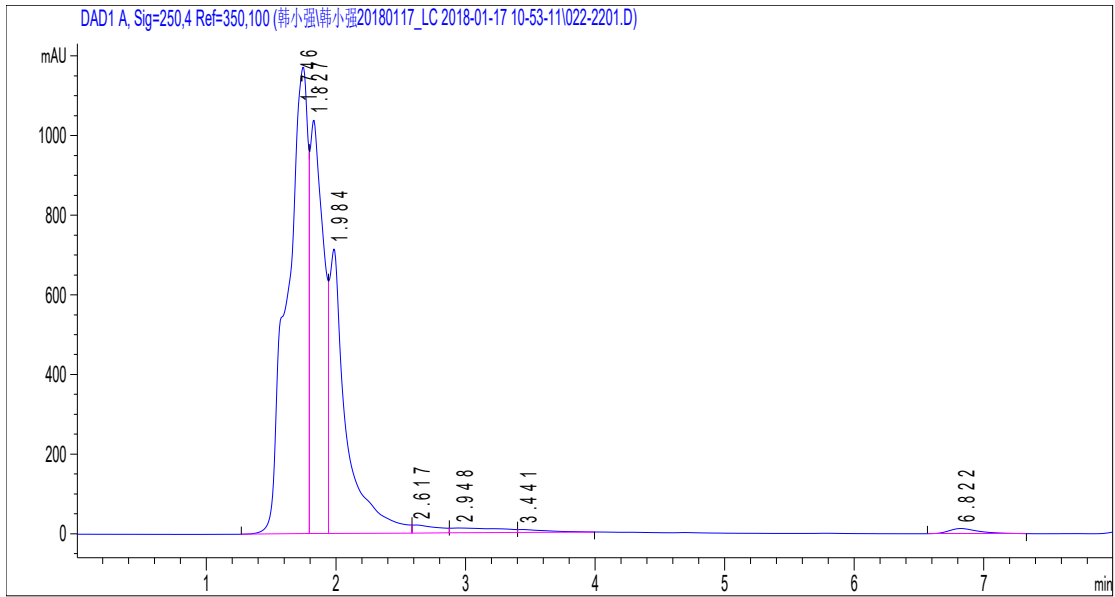


Figure S13 Sample added recovery (thidiazuron and diuron, 0.5mg/L, 3)

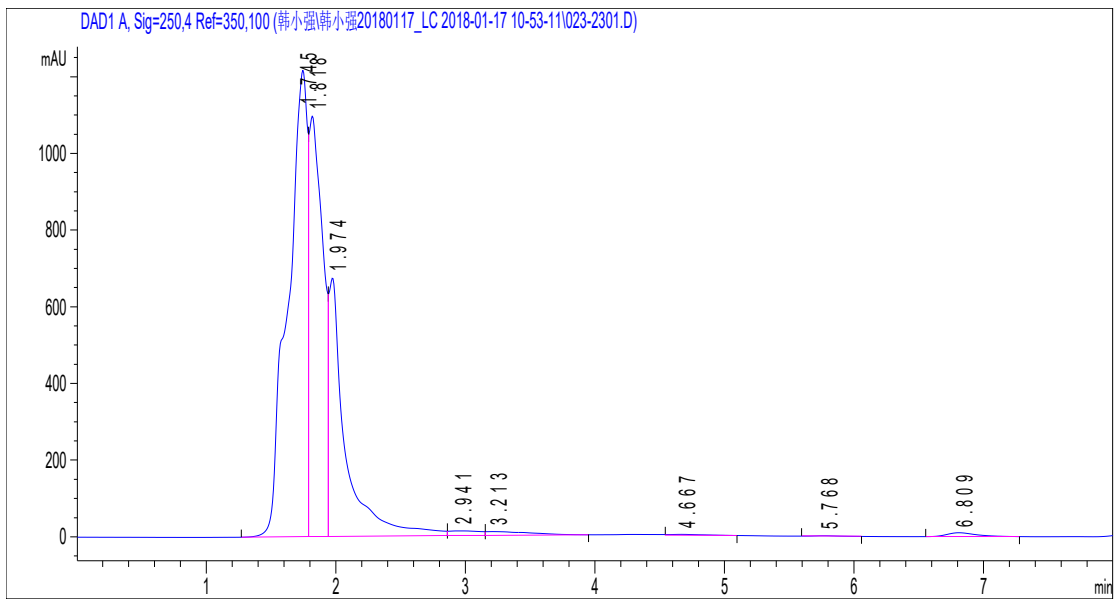


Figure S14 Sample added recovery (thidiazuron and diuron, 1.0mg/L, 1)

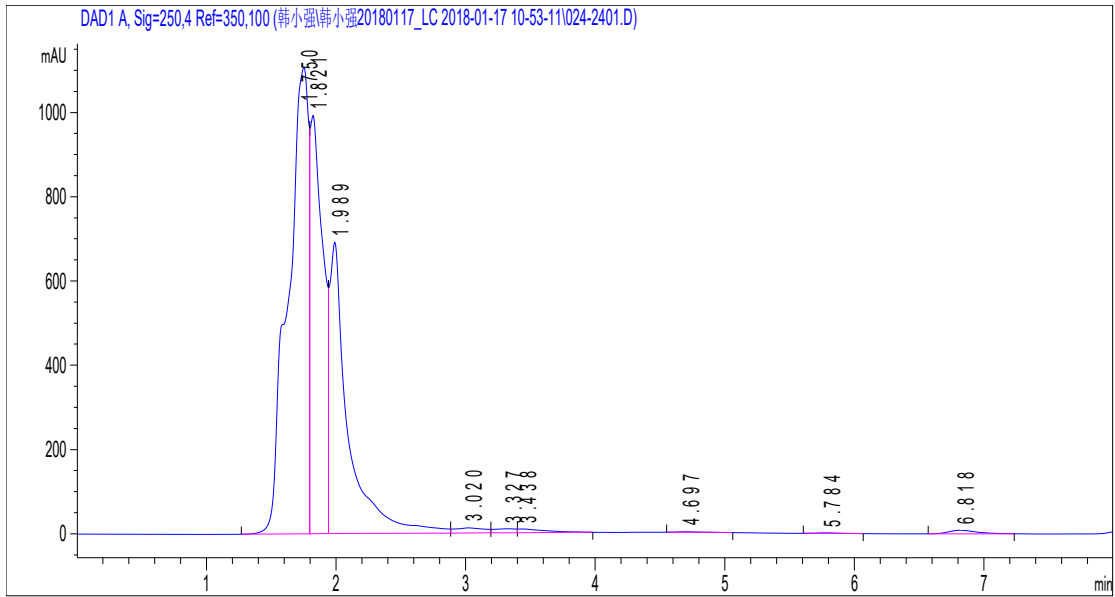


Figure S15 Sample added recovery (thidiazuron and diuron, 1.0mg/L, 2)

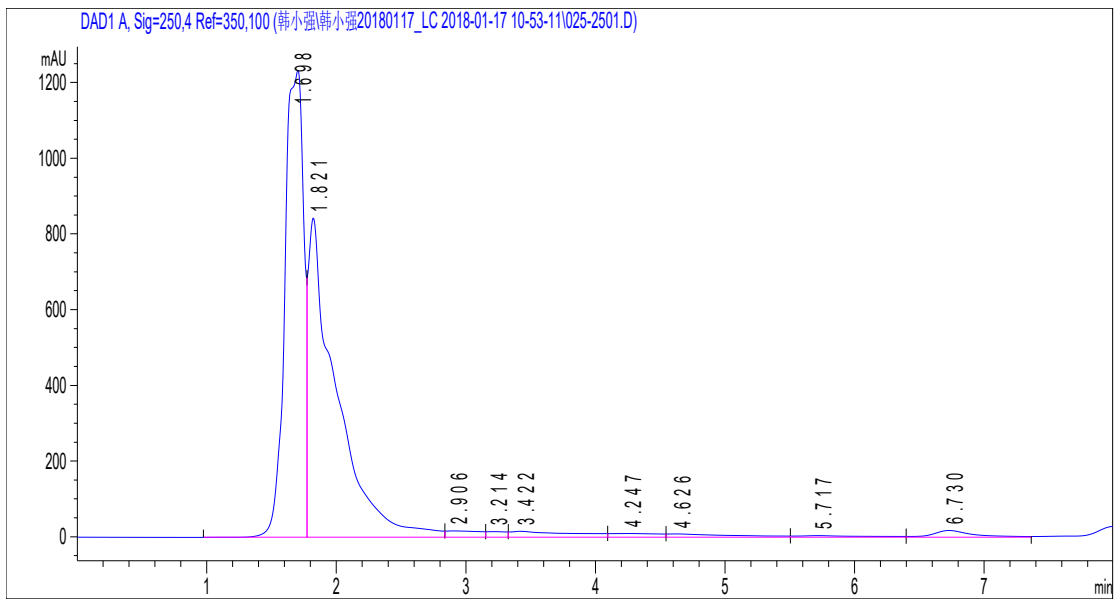


Figure S16 Sample added recovery (thidiazuron and diuron, 1.0mg/L, 3)

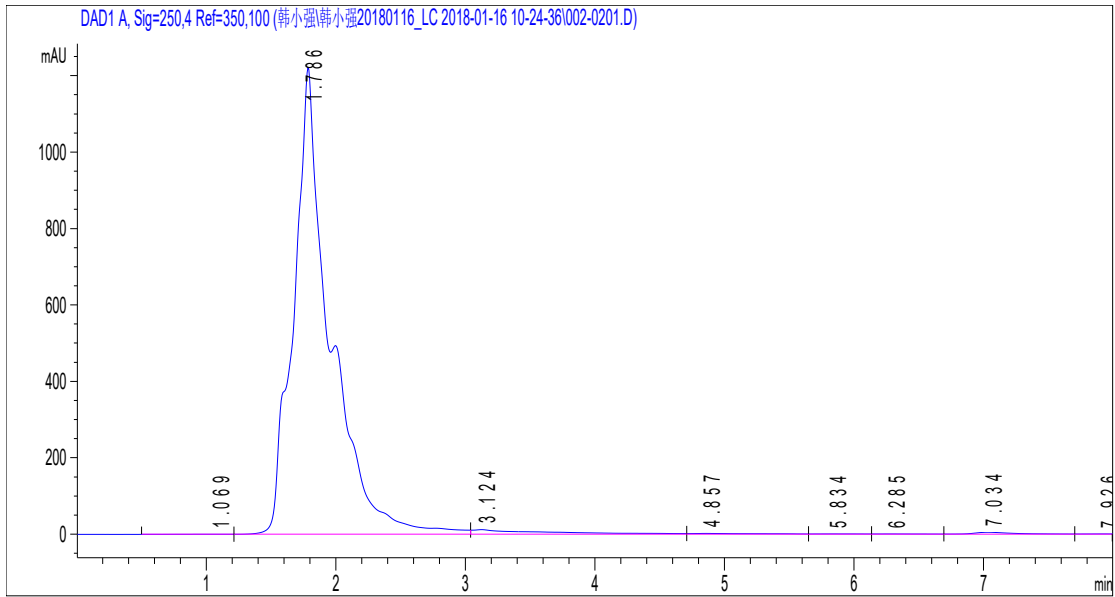


Figure S17 Sample of Cotton leaves (20170907, CK-Upper layer, Shihezi, E85.809, N44.665)

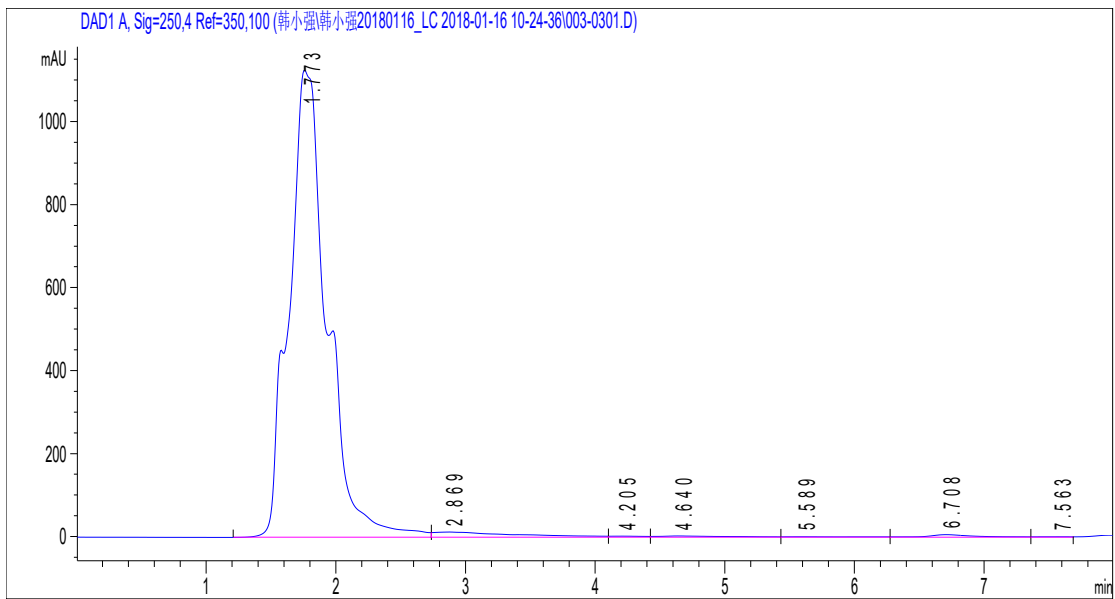


Figure S18 Sample of Cotton leaves (20170907, CK-Middle layer, Shihezi, E85.809, N44.665)

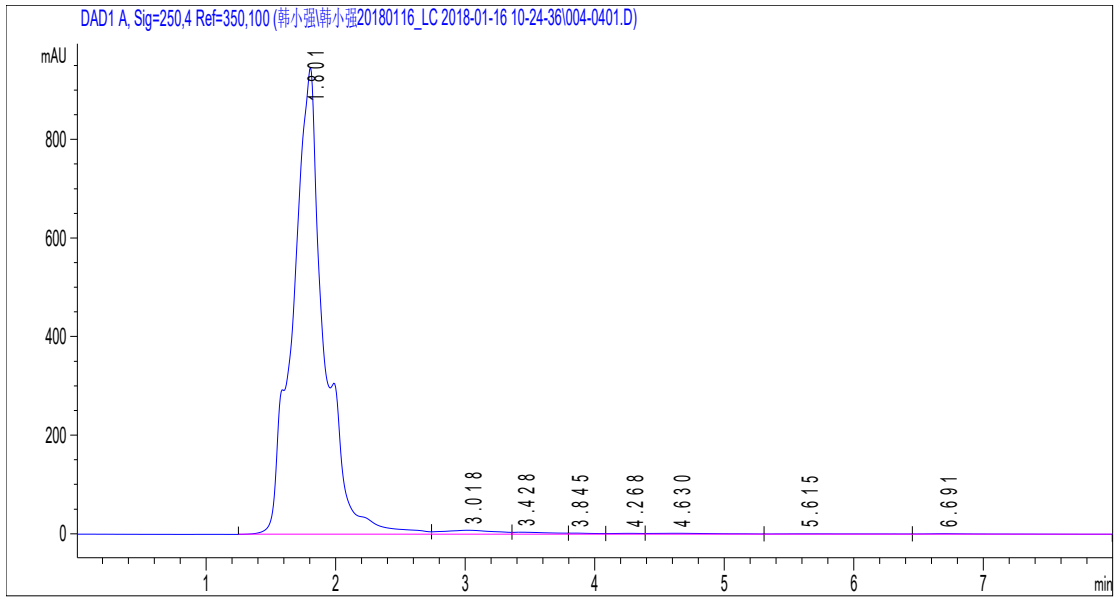


Figure S19 Sample of Cotton leaves (20170907, CK-Lower layer, Shihezi, E85.809, N44.665)

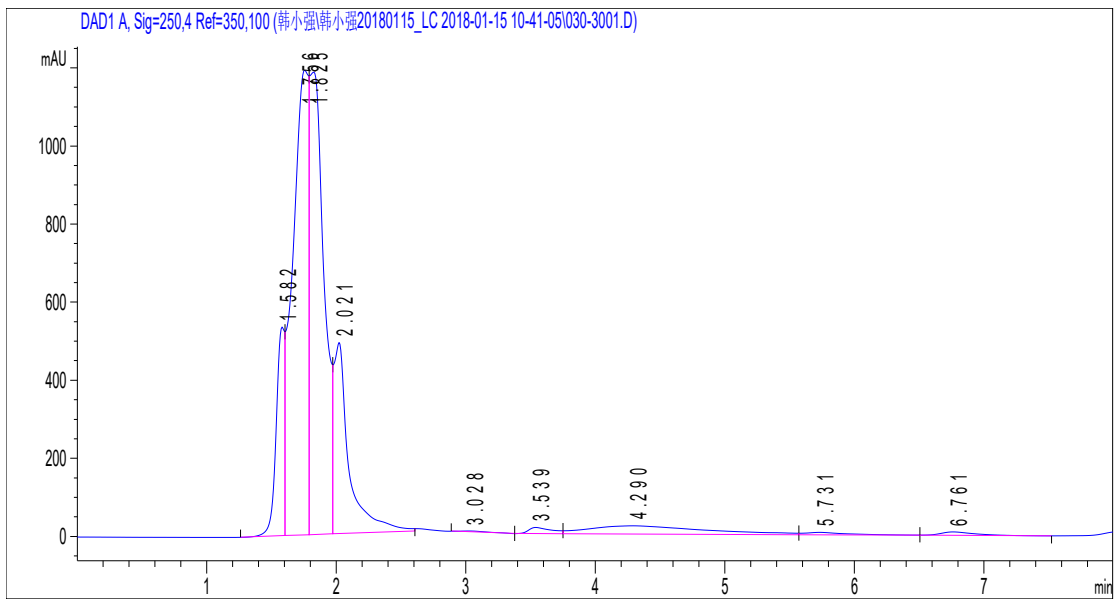


Figure S20 Sample of Cotton leaves (1d after spraying, 150g/ha- Upper layer, Shihezi, E85.809, N44.665)

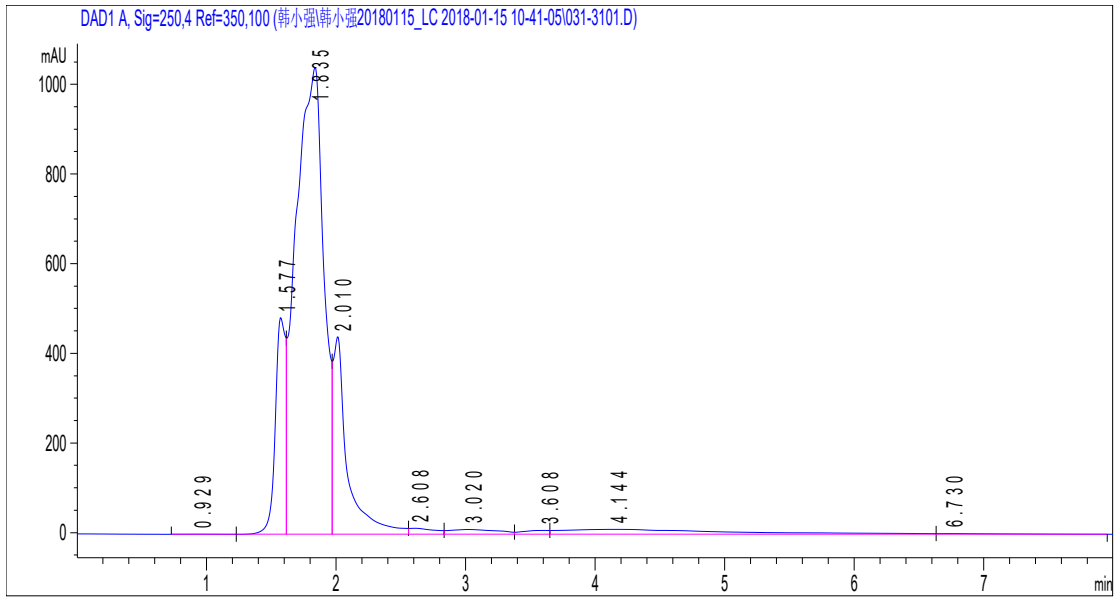


Figure S21 Sample of Cotton leaves (1d after spraying, 150g/ha- Middle layer, Shihezi, E85.809, N44.665)

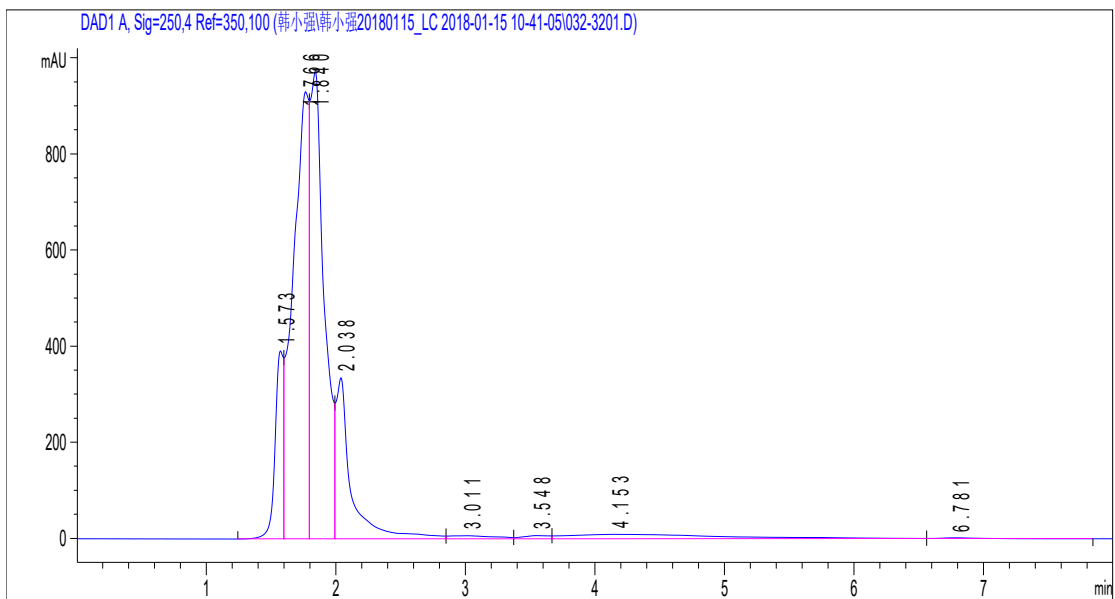


Figure S22 Sample of Cotton leaves (1d after spraying, 150g/ha- Lower layer, Shihezi, E85.809, N44.665)

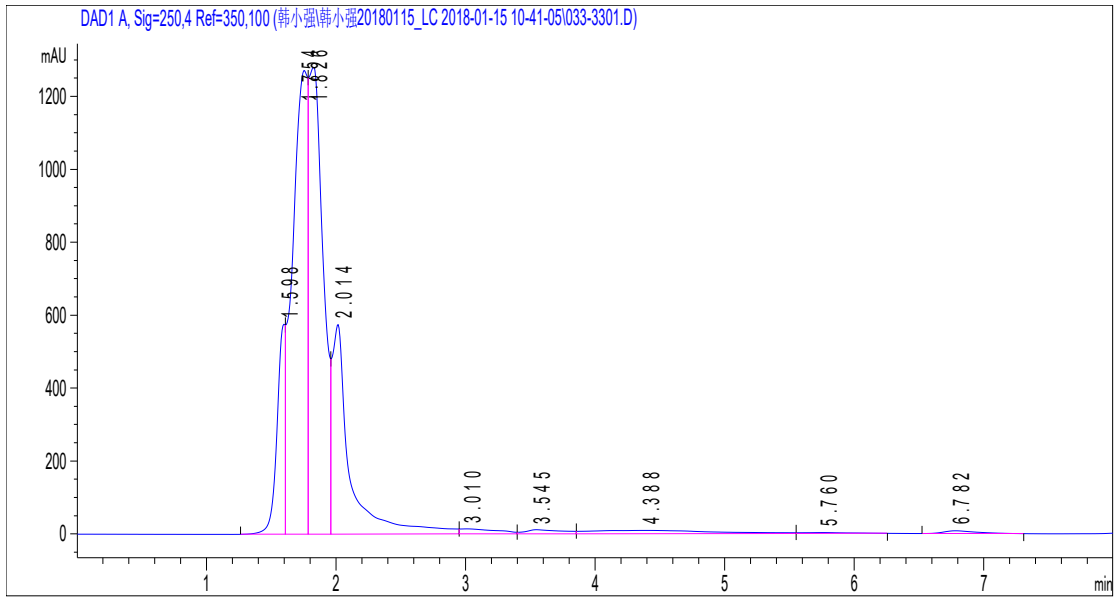


Figure S23 Sample of Cotton leaves (1d after spraying, 300g/ha- Upper layer, Shihezi, E85.809, N44.665)

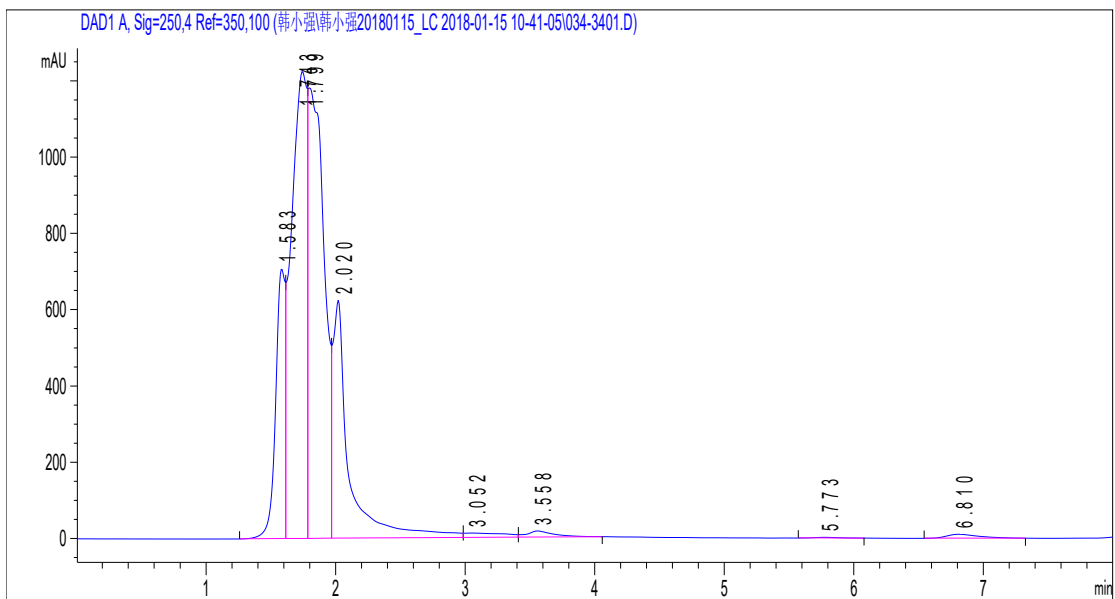


Figure S24 Sample of Cotton leaves (1d after spraying, 300g/ha- Middle layer, Shihezi, E85.809, N44.665)

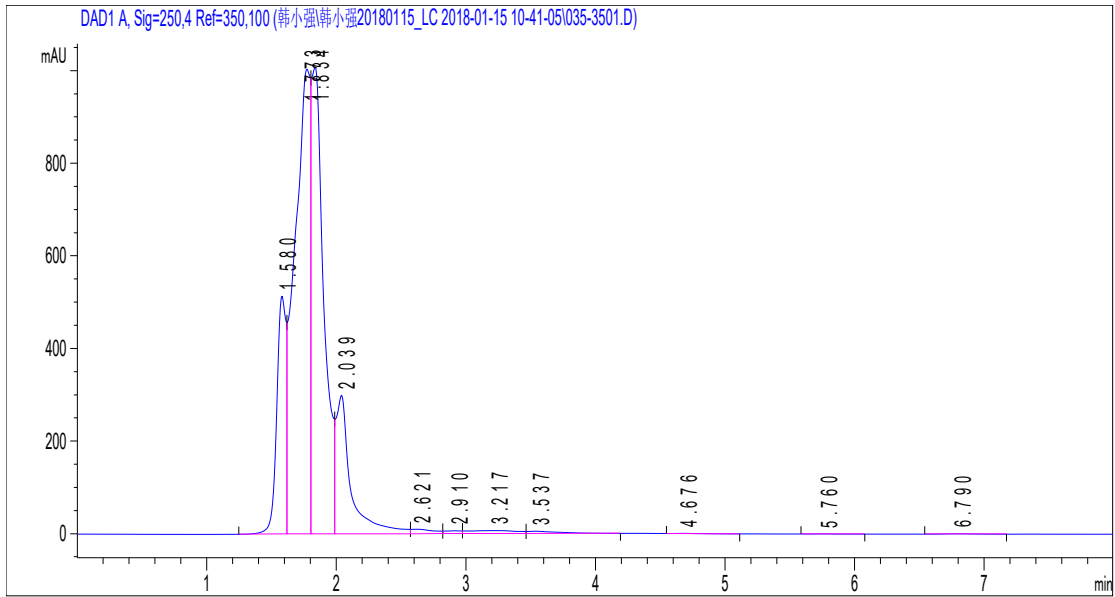


Figure S25 Sample of Cotton leaves (1d after spraying, 300g/ha- Lower layer, Shihezi, E85.809, N44.665)

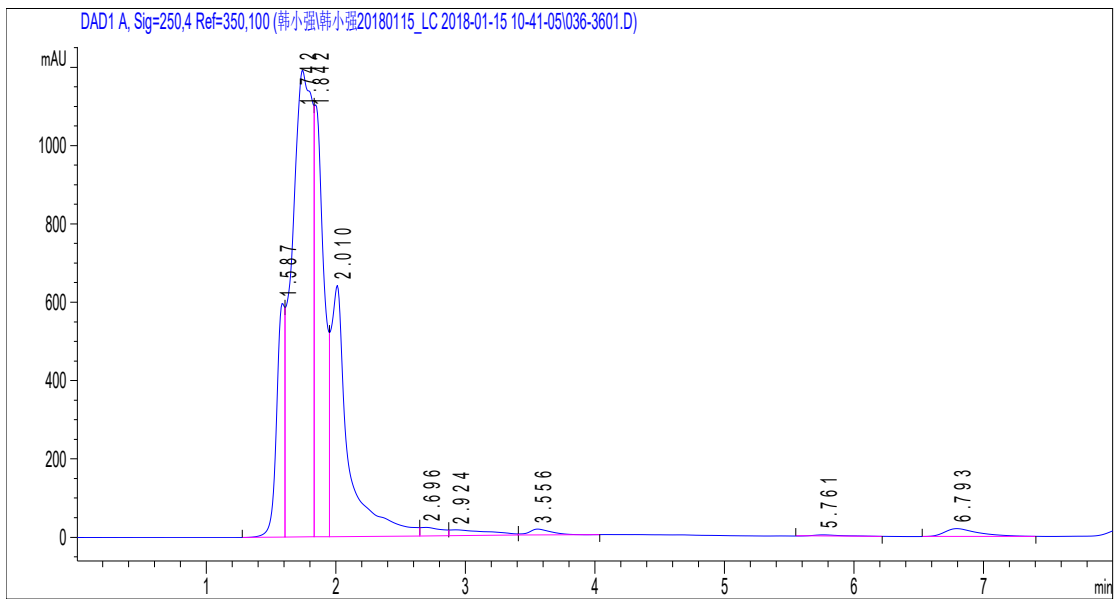


Figure S26 Sample of Cotton leaves (1d after spraying, 450g/ha- Upper layer, Shihezi, E85.809, N44.665)

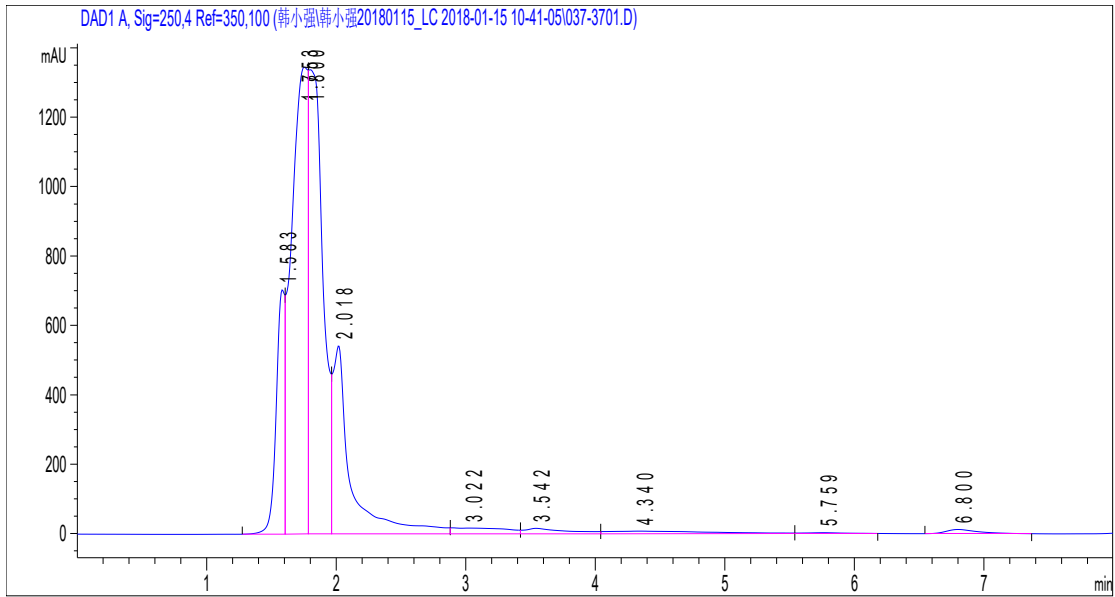


Figure S27 Sample of Cotton leaves (1d after spraying, 450g/ha- Middle layer, Shihezi, E85.809, N44.665)

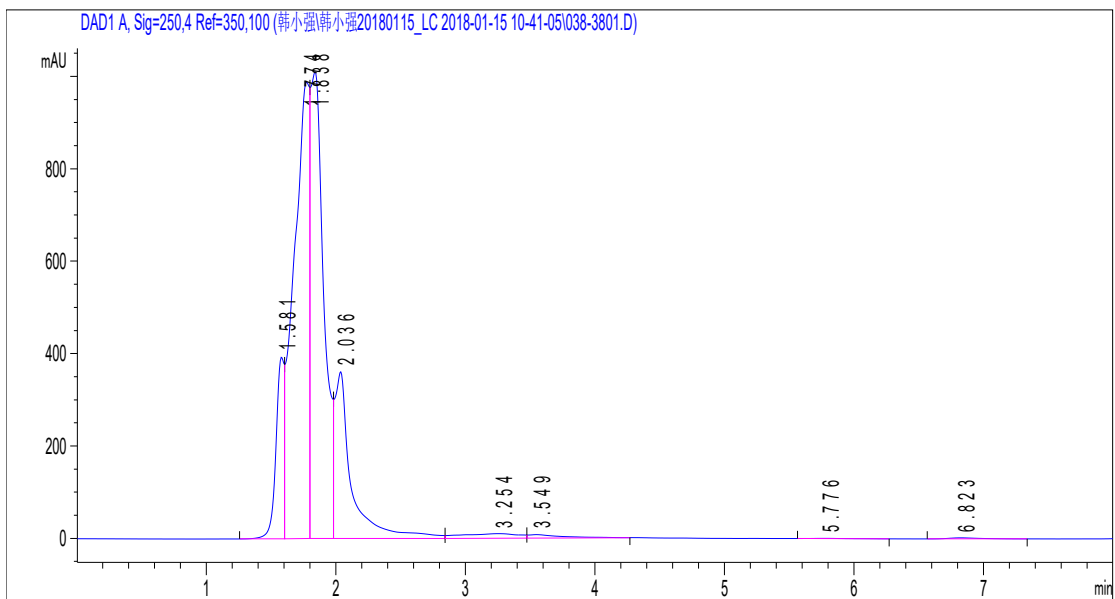


Figure S28 Sample of Cotton leaves (1d after spraying, 450g/ha- Lower layer, Shihezi, E85.809, N44.665)



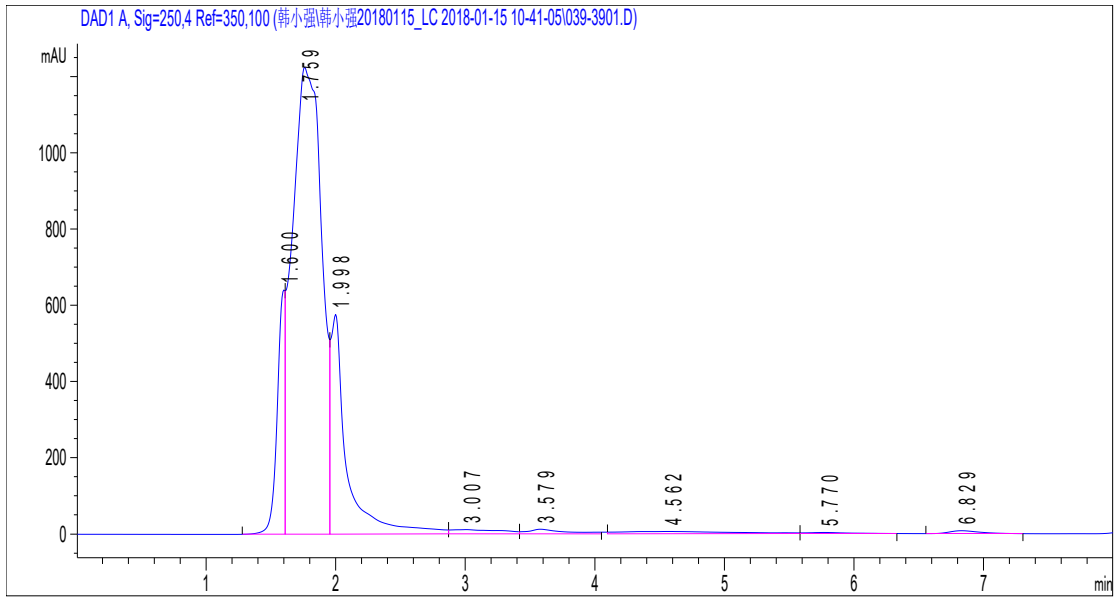


Figure S29 Sample of Cotton leaves (4d after spraying, 150g/ha- Upper layer, Shihezi, E85.809, N44.665)

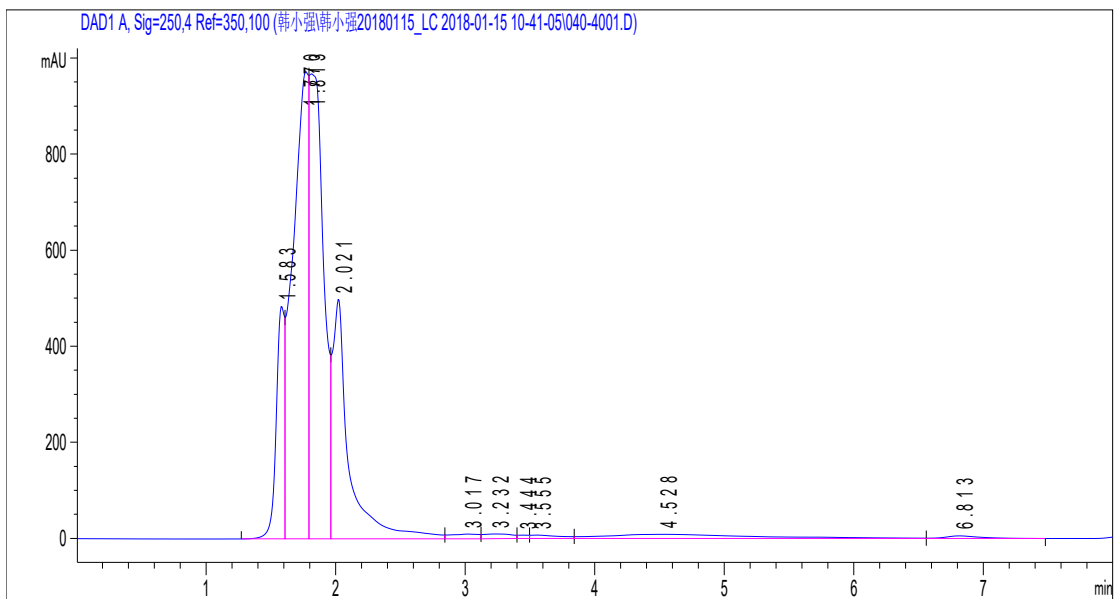


Figure S30 Sample of Cotton leaves (4d after spraying, 150g/ha- Middle layer, Shihezi, E85.809, N44.665)

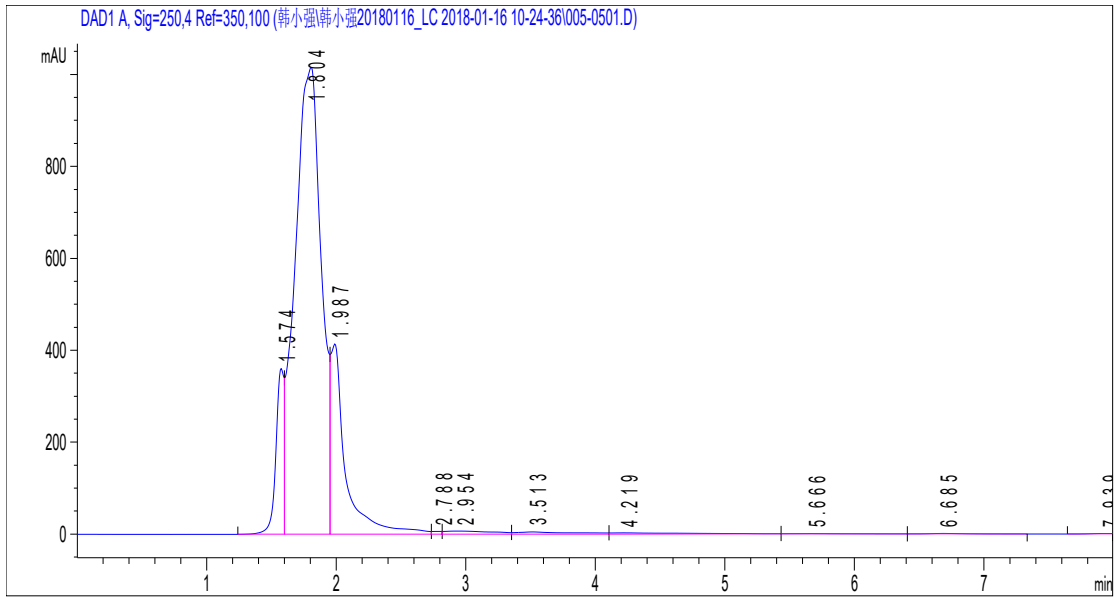


Figure S31 Sample of Cotton leaves (4d after spraying, 150g/ha- Lower layer, Shihezi, E85.809, N44.665)

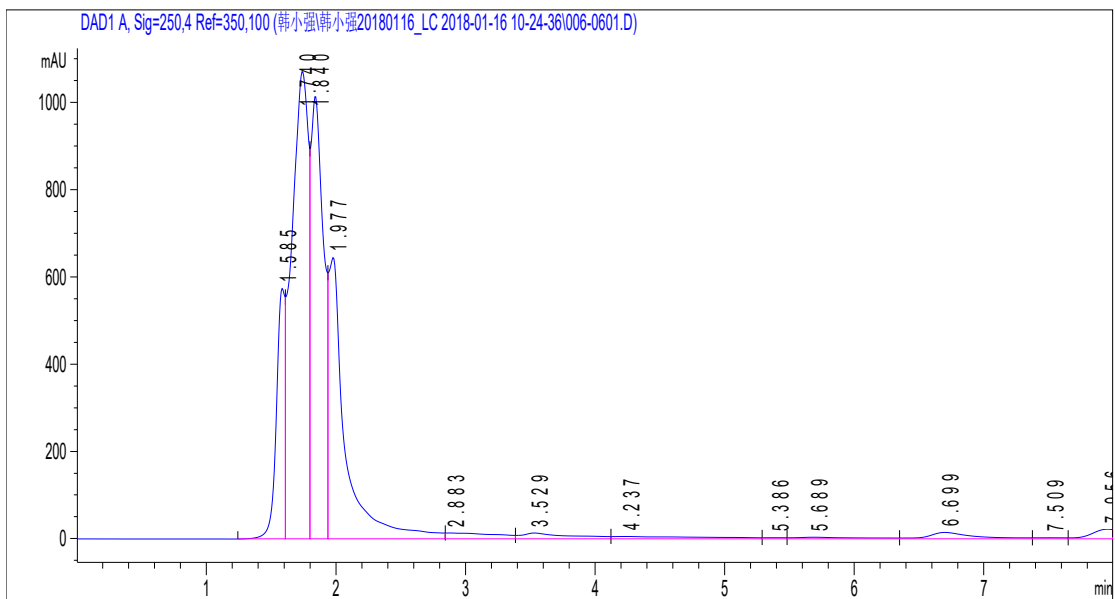


Figure S32 Sample of Cotton leaves (4d after spraying, 300g/ha- Upper layer, Shihezi, E85.809, N44.665)

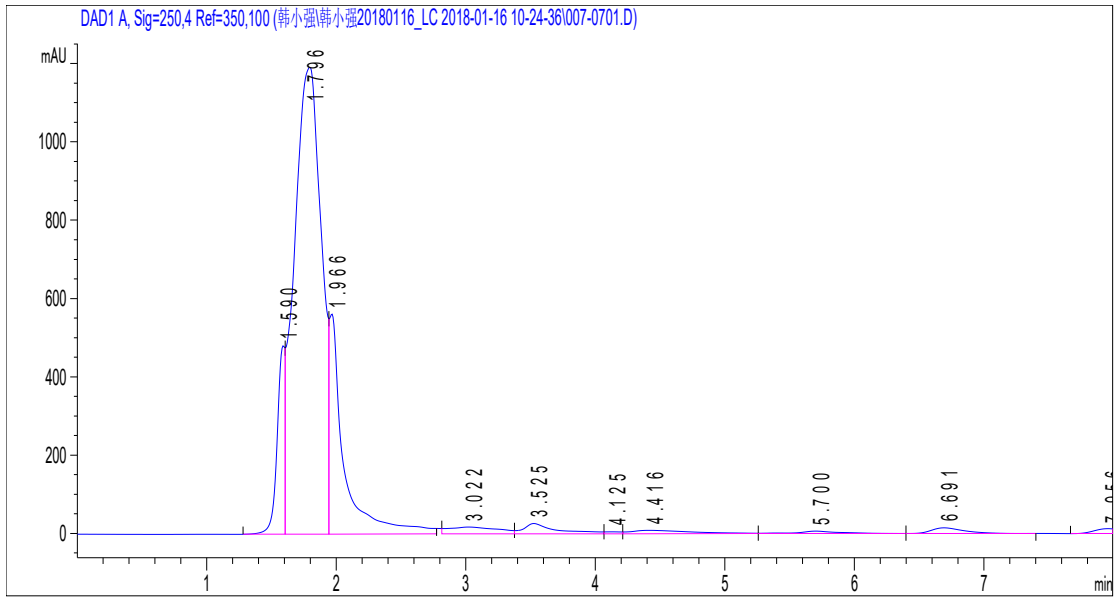


Figure S33 Sample of Cotton leaves (4d after spraying, 300g/ha- Middle layer, Shihezi, E85.809, N44.665)

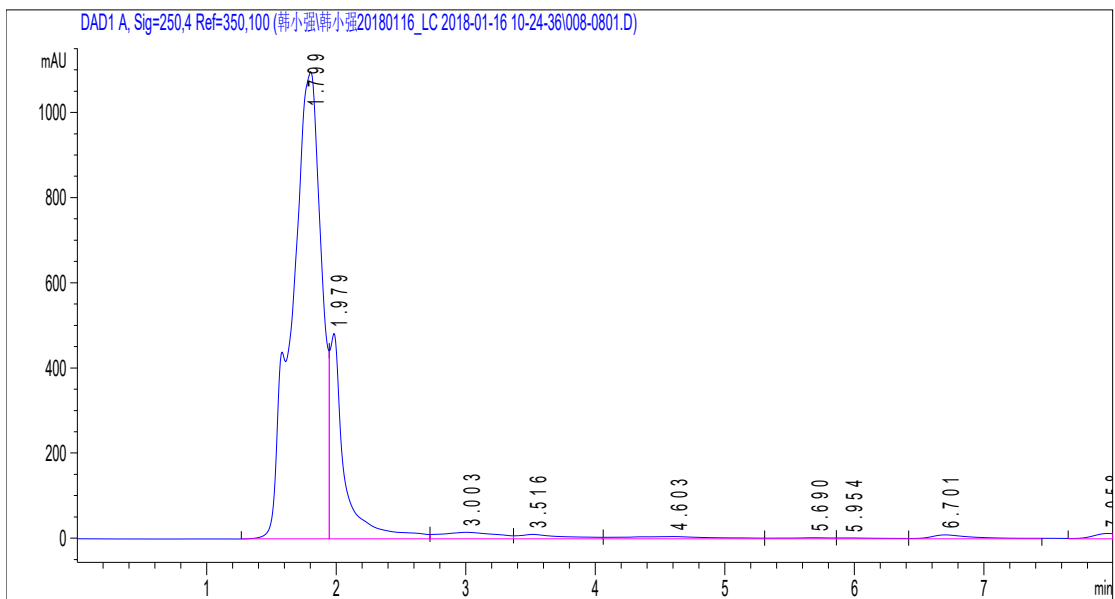


Figure S34 Sample of Cotton leaves (4d after spraying, 300g/ha- Lower layer, Shihezi, E85.809, N44.665)

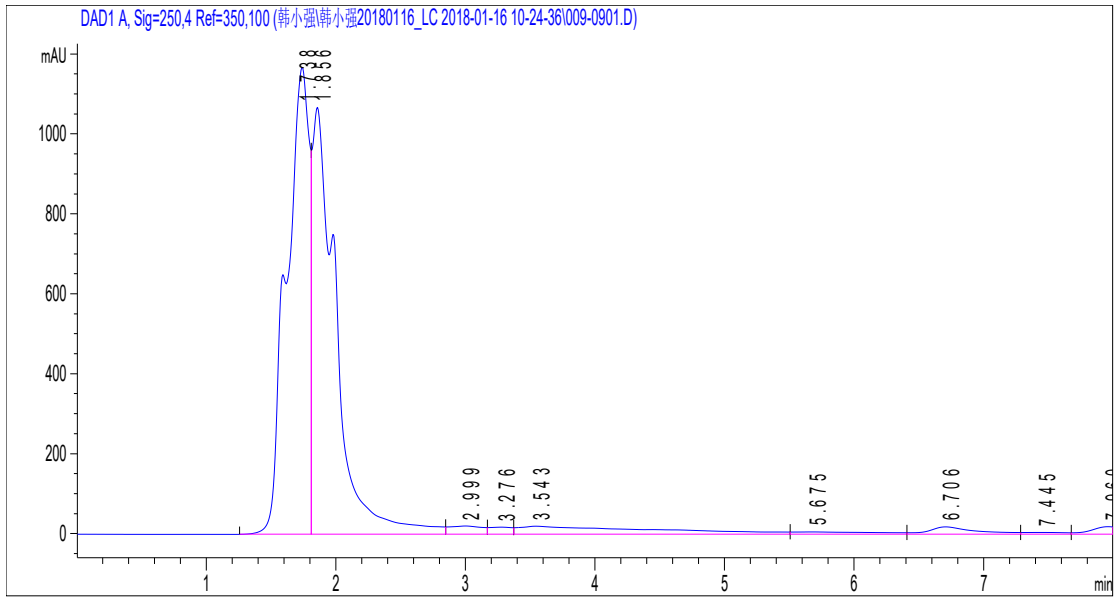


Figure S35 Sample of Cotton leaves (4d after spraying, 450g/ha- Upper layer, Shihezi, E85.809, N44.665)

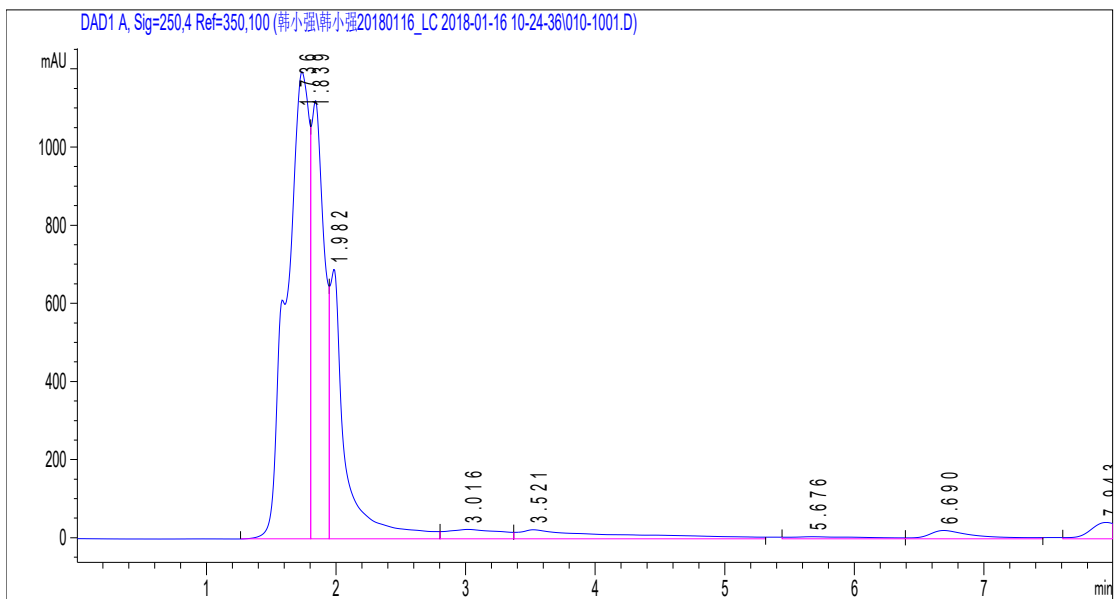


Figure S36 Sample of Cotton leaves (4d after spraying, 450g/ha- Middle layer, Shihezi, E85.809, N44.665)

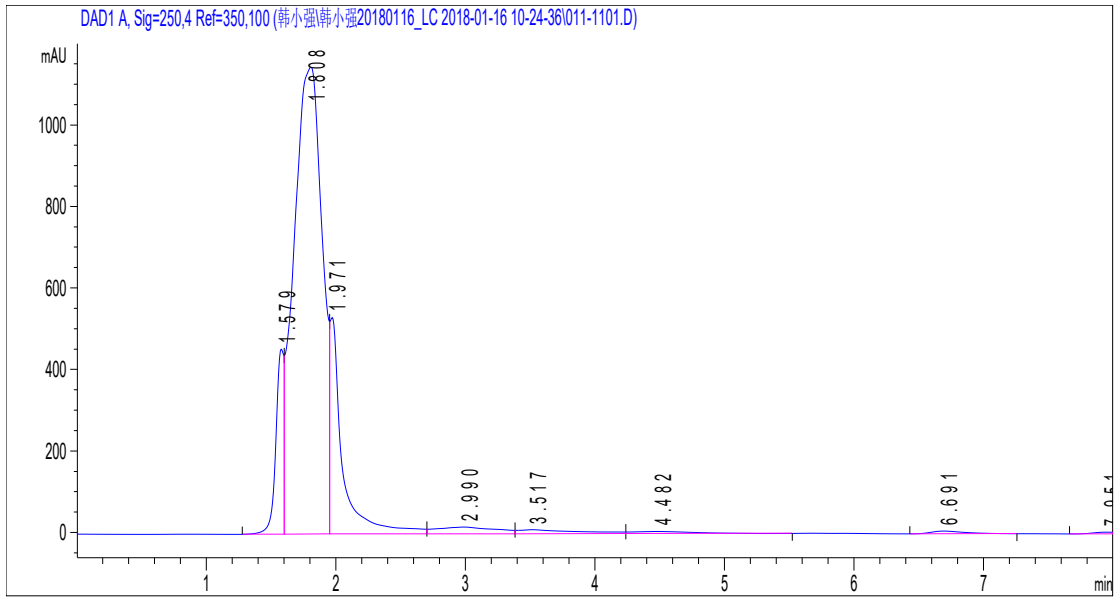


Figure S37 Sample of Cotton leaves (4d after spraying, 450g/ha- Lower layer, Shihezi, E85.809, N44.665)

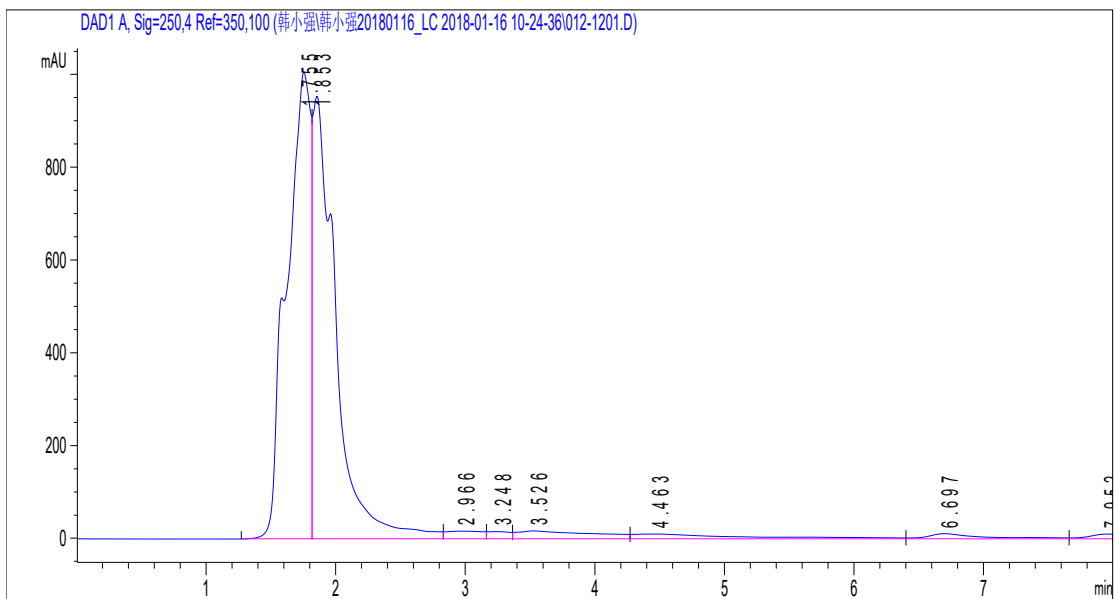


Figure S38 Sample of Cotton leaves (7d after spraying, 150g/ha- Upper layer, Shihezi, E85.809, N44.665)

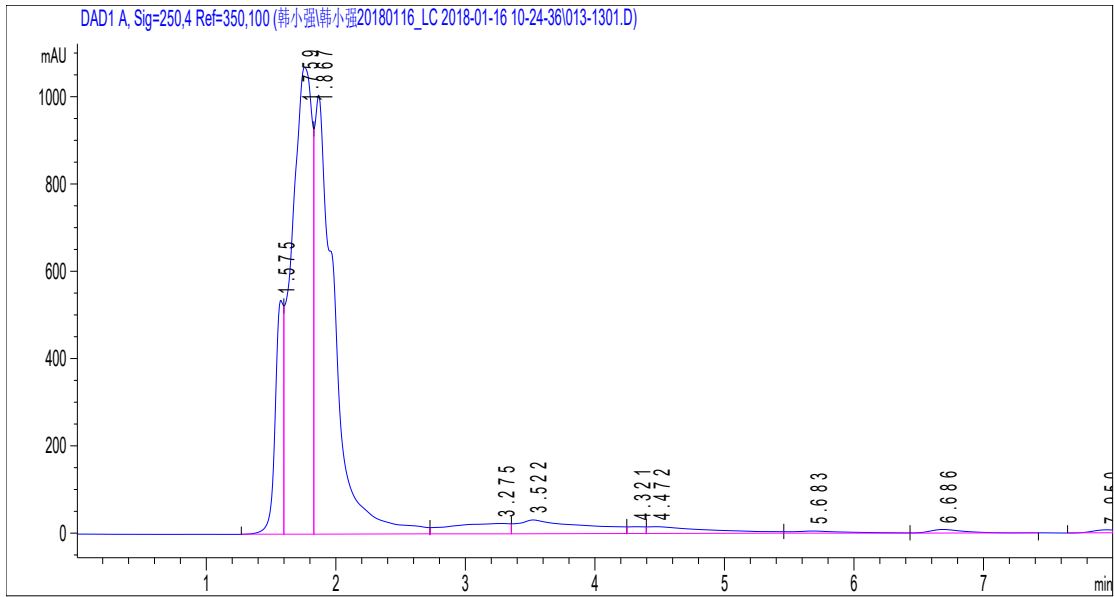


Figure S39 Sample of Cotton leaves (7d after spraying, 150g/ha- Middle layer, Shihezi, E85.809, N44.665)

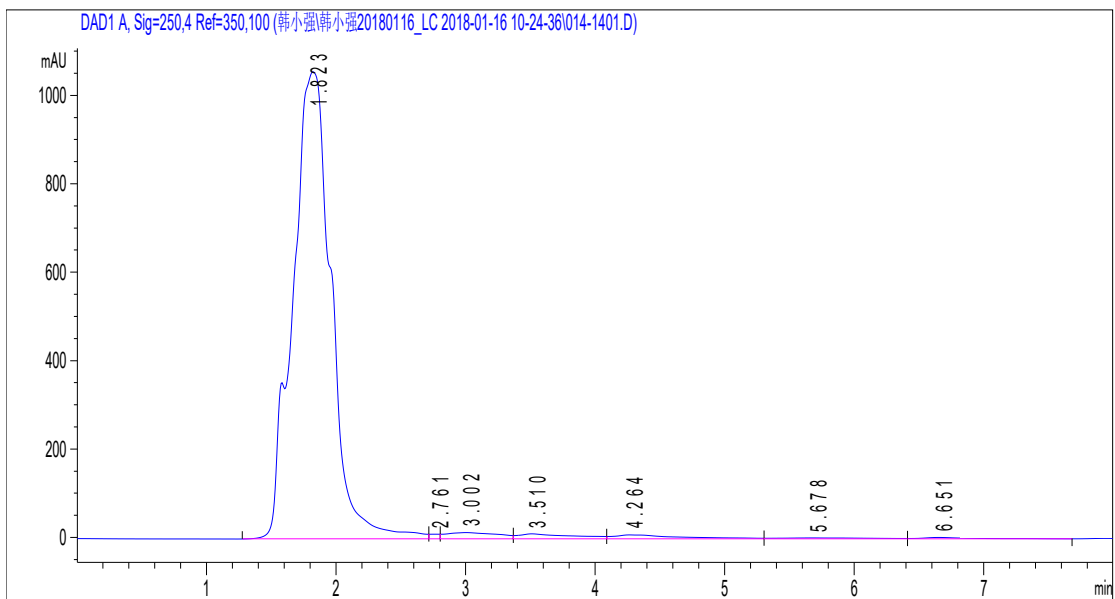


Figure S40 Sample of Cotton leaves (7d after spraying, 150g/ha- Lower layer, Shihezi, E85.809, N44.665)

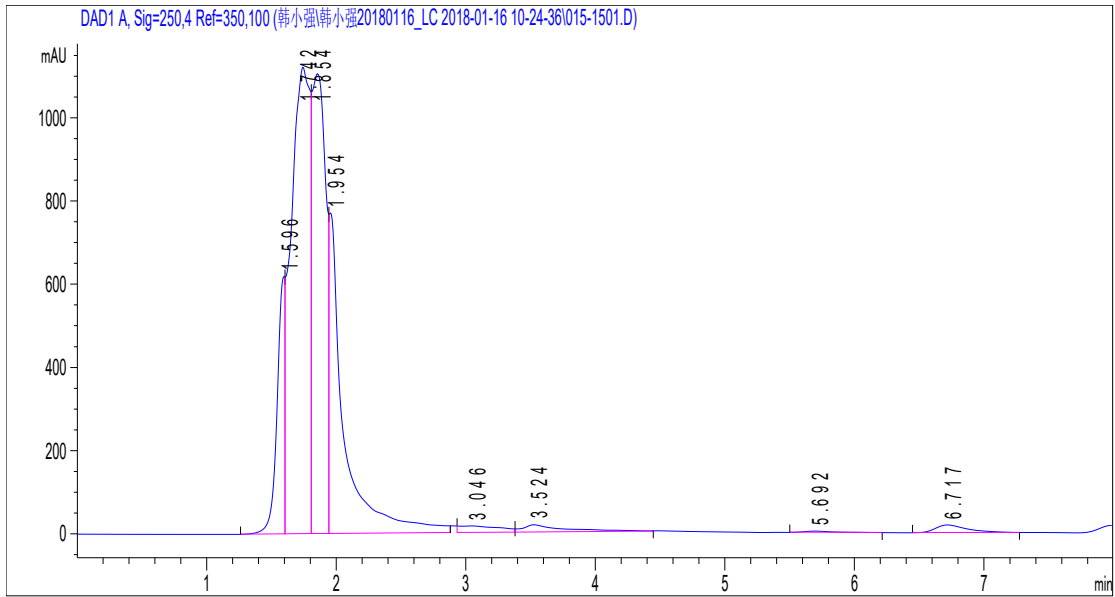


Figure S41 Sample of Cotton leaves (7d after spraying, 300g/ha- Upper layer, Shihezi, E85.809, N44.665)

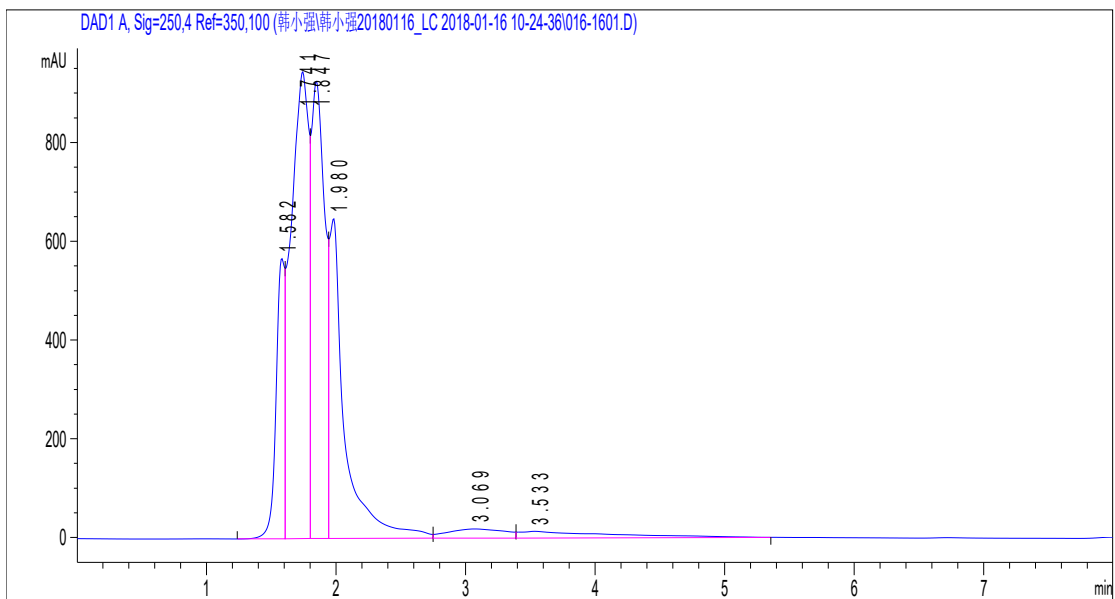


Figure S42 Sample of Cotton leaves (7d after spraying, 300g/ha- Middle layer, Shihezi, E85.809, N44.665)

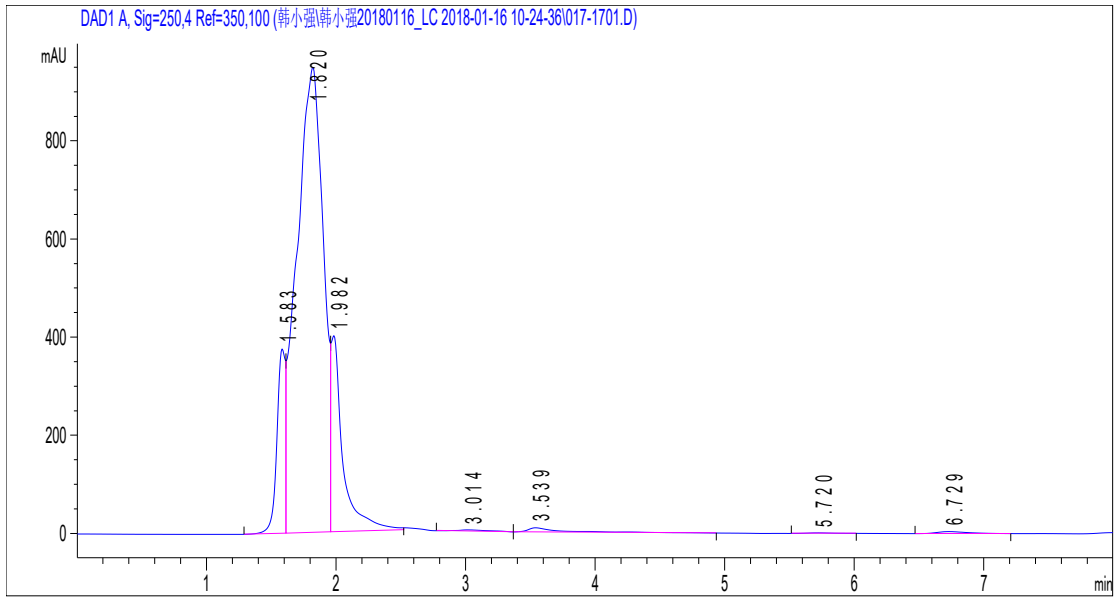


Figure S43 Sample of Cotton leaves (7d after spraying, 300g/ha- Lower layer, Shihezi, E85.809, N44.665)

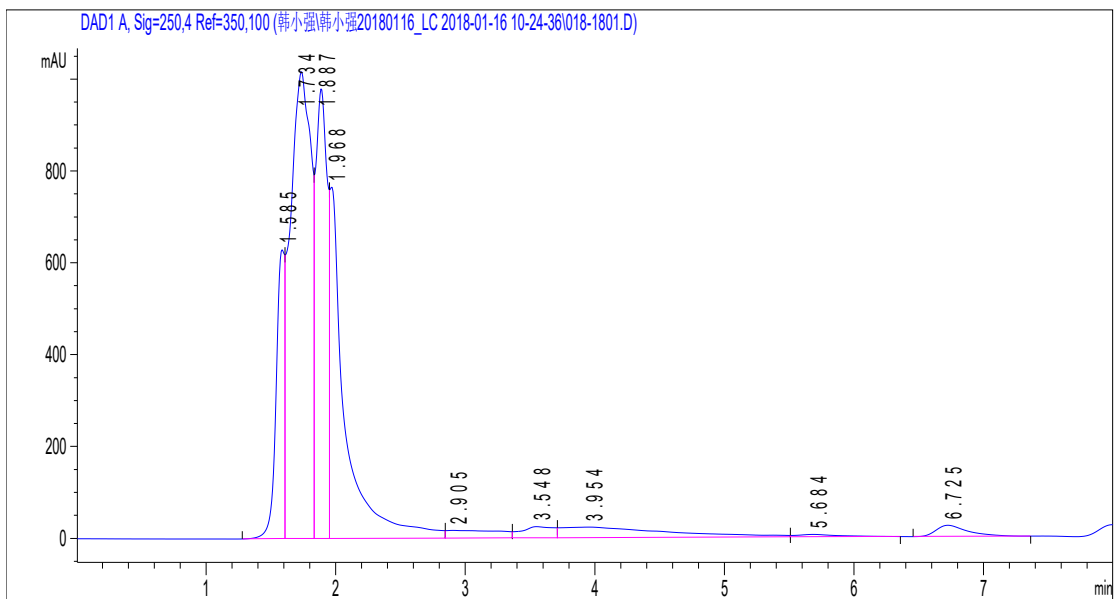


Figure S44 Sample of Cotton leaves (7d after spraying, 450g/ha- Upper layer, Shihezi, E85.809, N44.665)



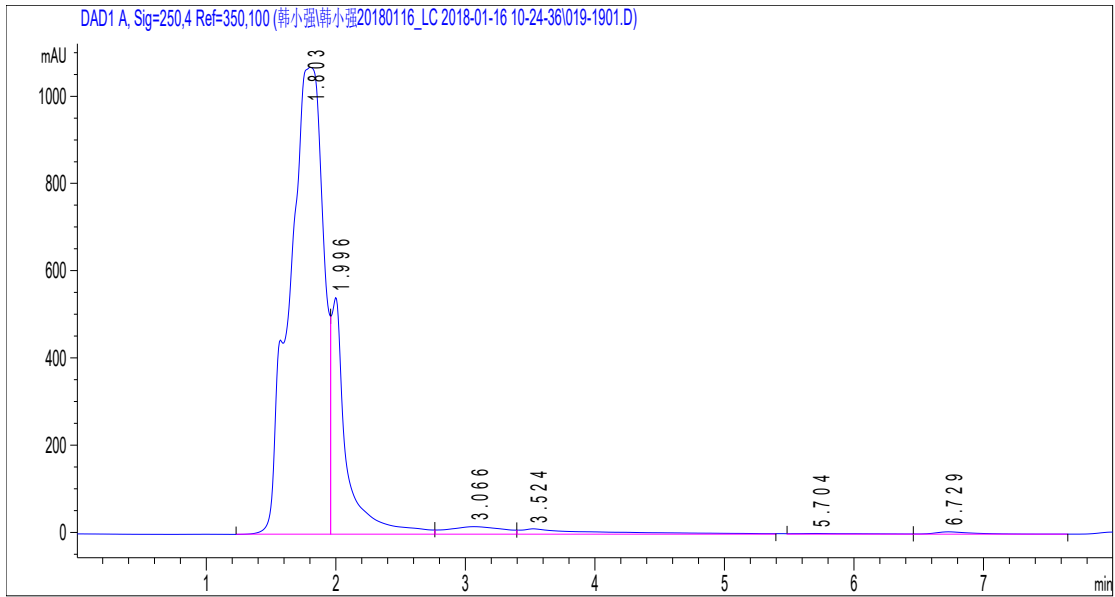


Figure S45 Sample of Cotton leaves (7d after spraying, 450g/ha- Middle layer, Shihezi, E85.809, N44.665)

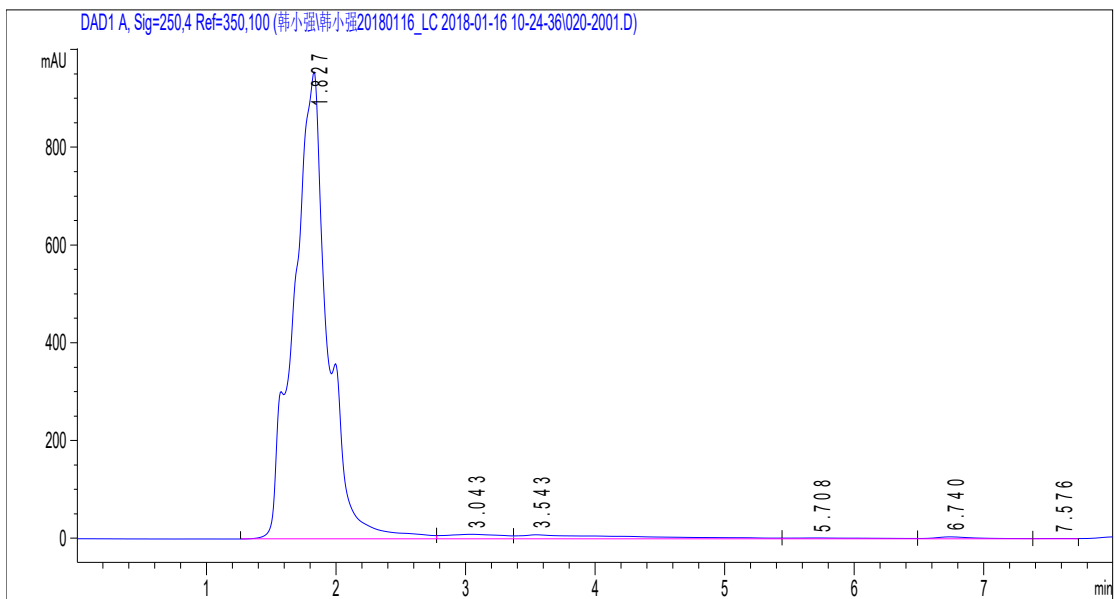


Figure S46 Sample of Cotton leaves (7d after spraying, 450g/ha- Lower layer, Shihezi, E85.809, N44.665)

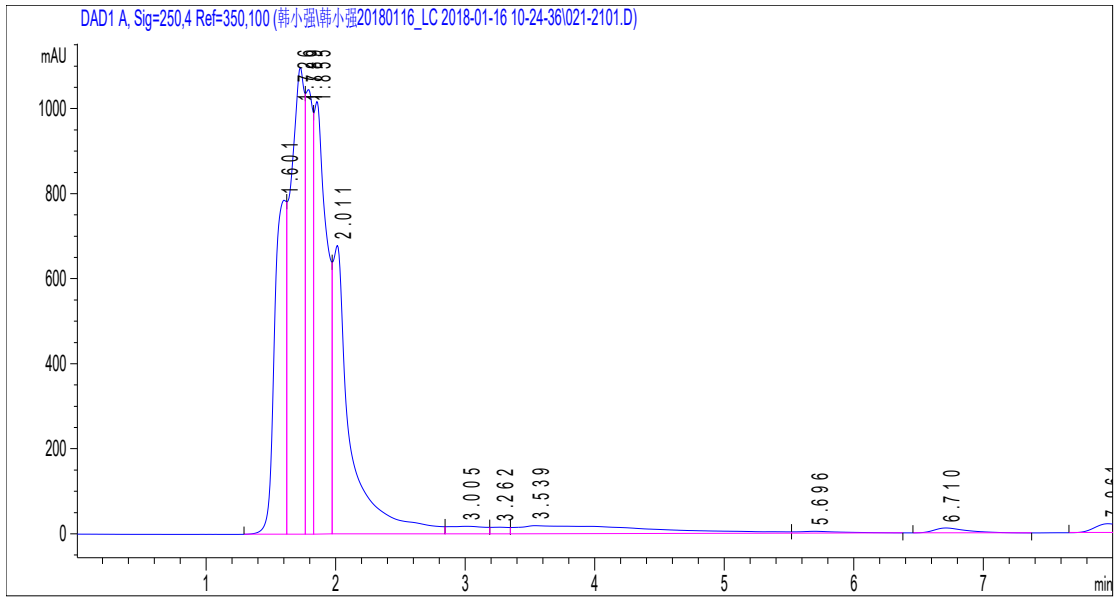


Figure S47 Sample of Cotton leaves (8d after spraying, 150g/ha- Upper layer, Shihezi, E85.809, N44.665)

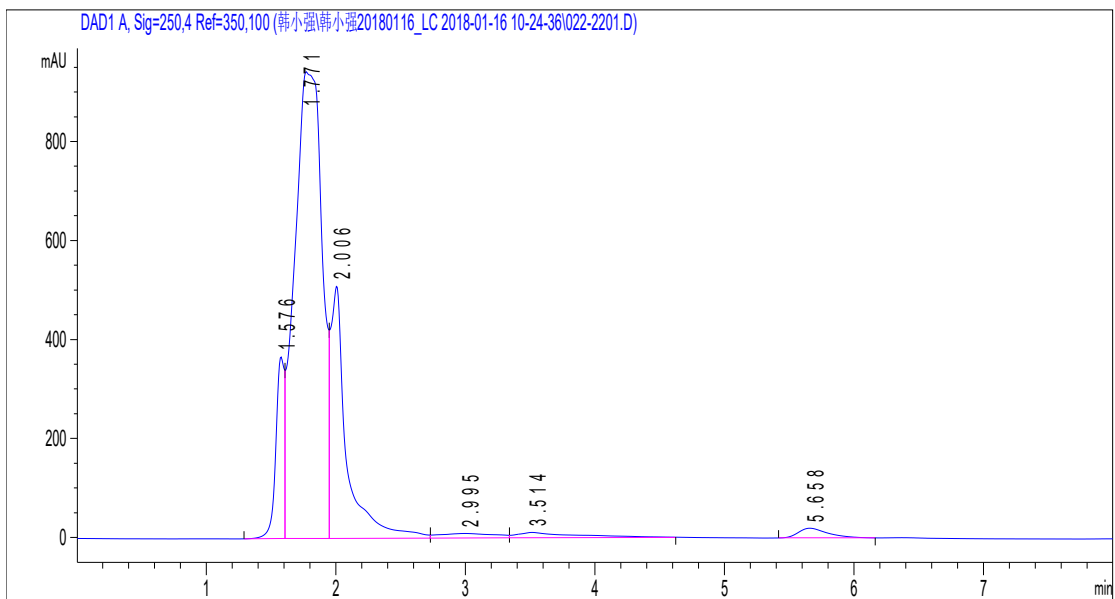


Figure S48 Sample of Cotton leaves (8d after spraying, 150g/ha- middle layer, Shihezi, E85.809, N44.665)

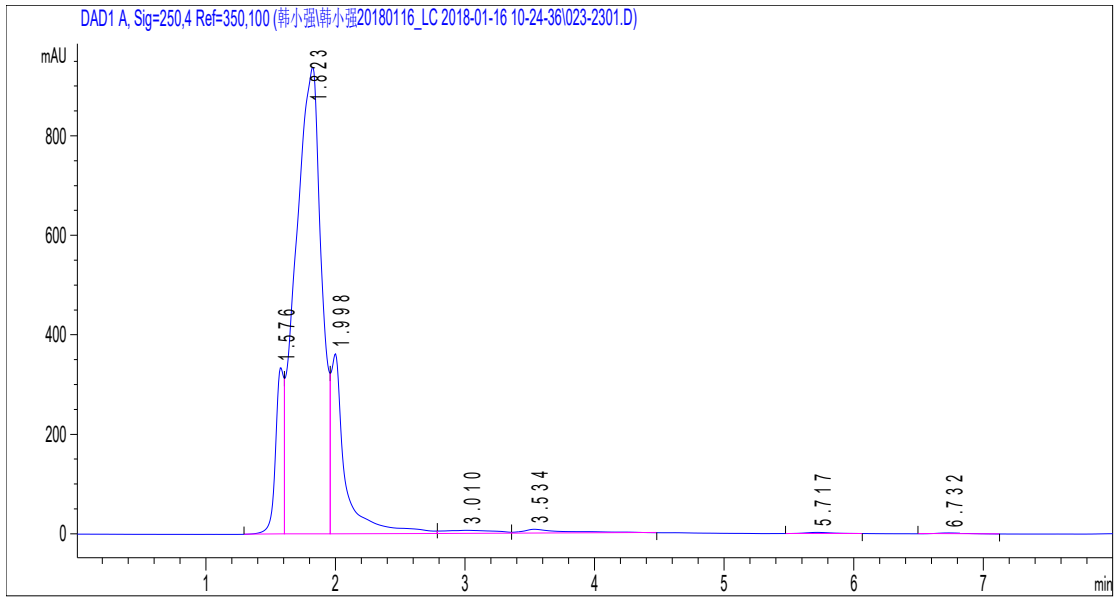


Figure S49 Sample of Cotton leaves (8d after spraying, 150g/ha- Lower layer, Shihezi, E85.809, N44.665)

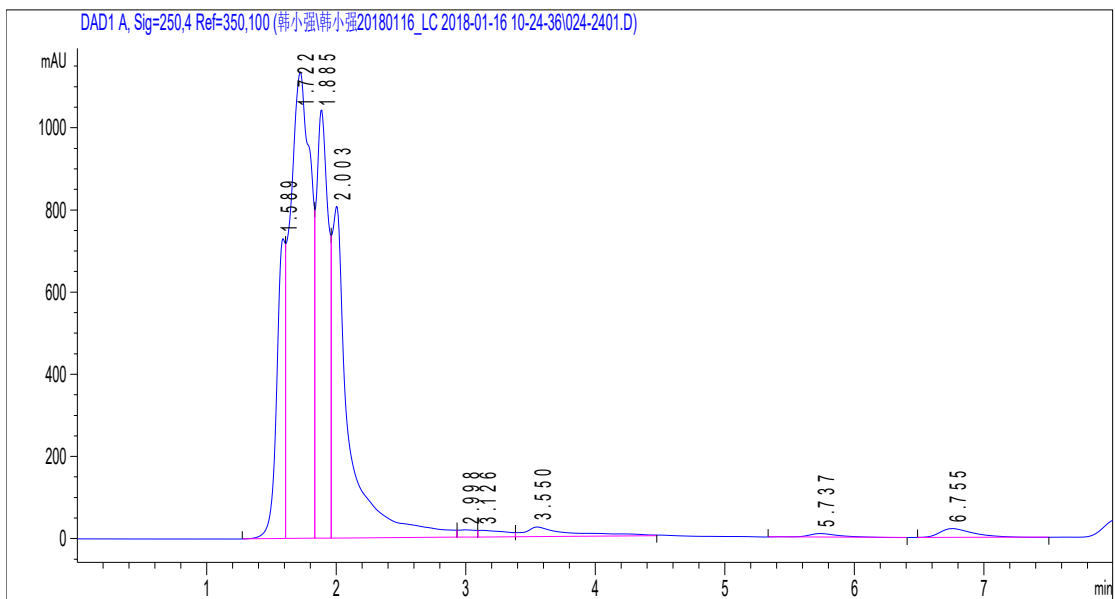


Figure S50 Sample of Cotton leaves (8d after spraying, 300g/ha- Upper layer, Shihezi, E85.809, N44.665)

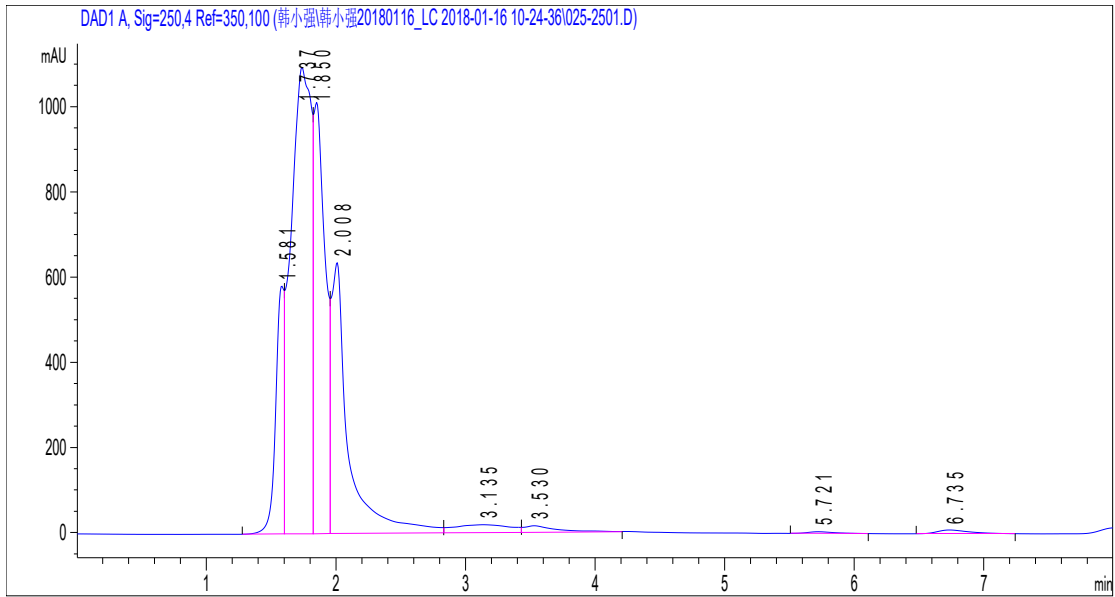


Figure S51 Sample of Cotton leaves (8d after spraying, 300g/ha- Middler layer, Shihezi, E85.809, N44.665)

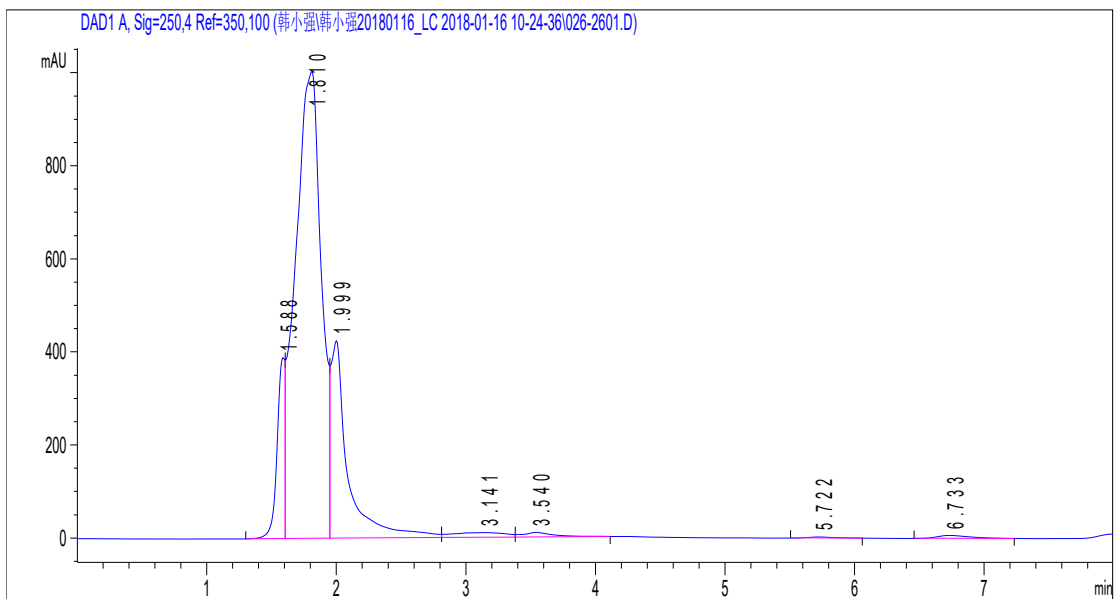


Figure S52 Sample of Cotton leaves (8d after spraying, 300g/ha- Lower layer, Shihezi, E85.809, N44.665)

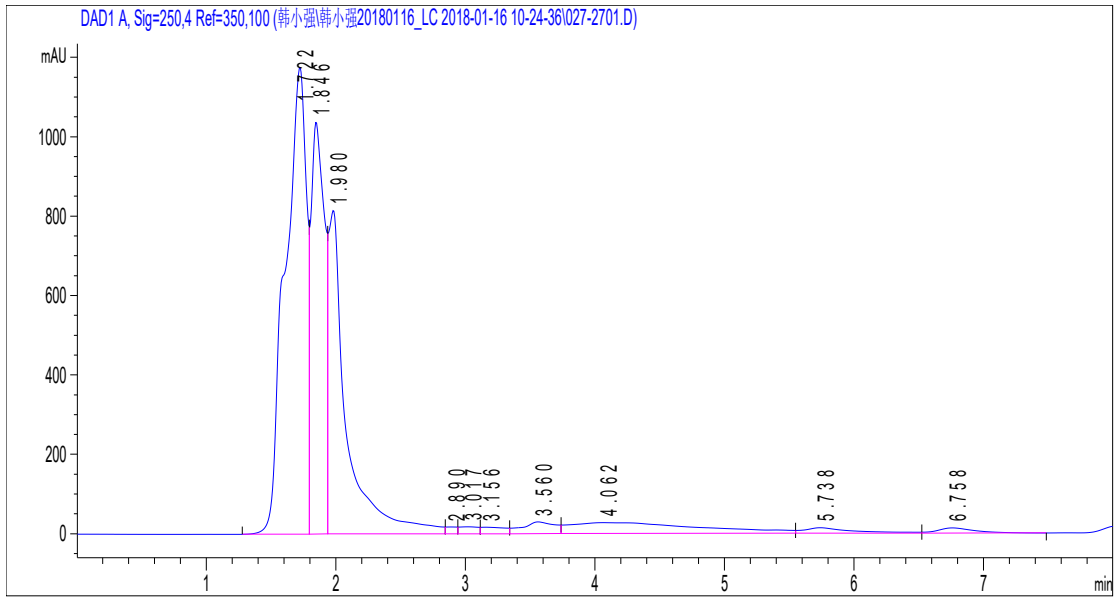


Figure S53 Sample of Cotton leaves (8d after spraying, 450g/ha- Upper layer, Shihezi, E85.809, N44.665)

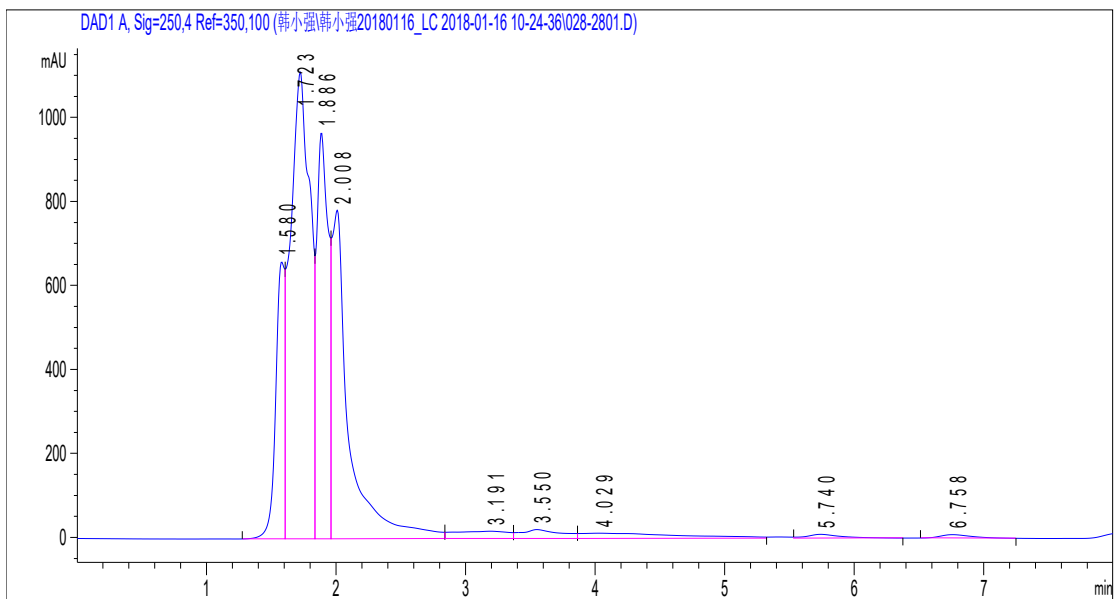


Figure S54 Sample of Cotton leaves (8d after spraying, 450g/ha- Middle layer, Shihezi, E85.809, N44.665)

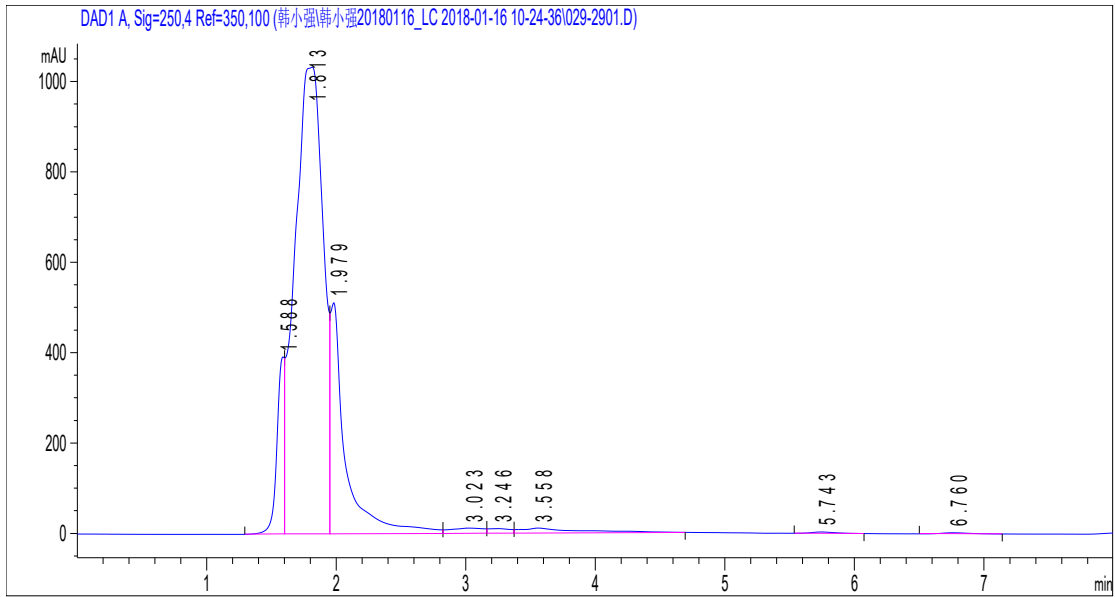


Figure S55 Sample of Cotton leaves (8d after spraying, 450g/ha- Lower layer, Shihezi, E85.809, N44.665)

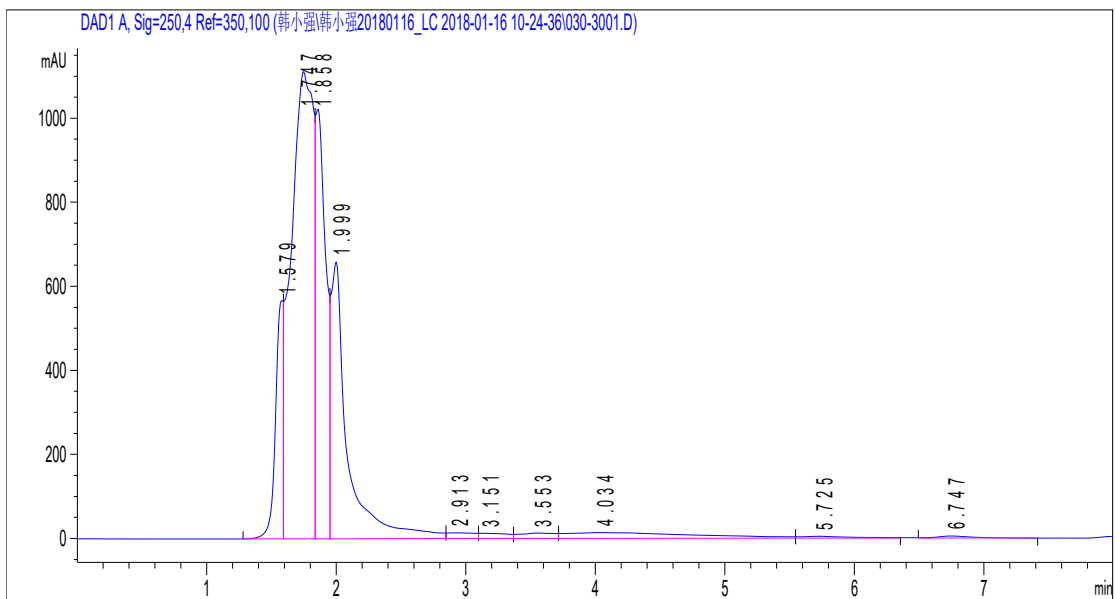


Figure S56 Sample of Cotton leaves (12d after spraying, 150g/ha- Middle layer, Shihezi, E85.809, N44.665)

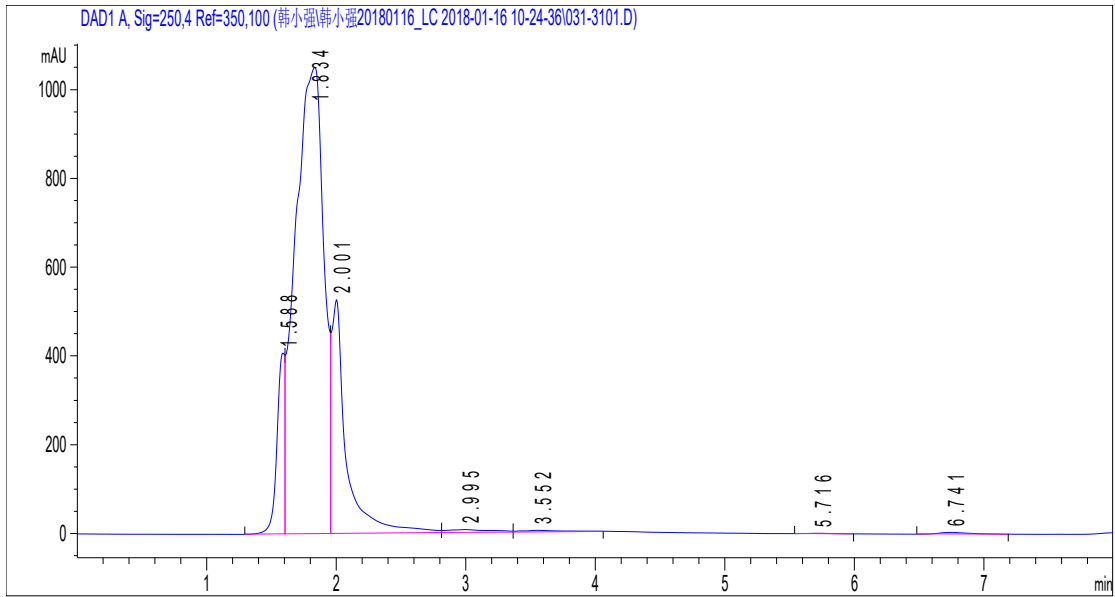


Figure S57 Sample of Cotton leaves (12d after spraying, 150g/ha- Lower layer, Shihezi, E85.809, N44.665)

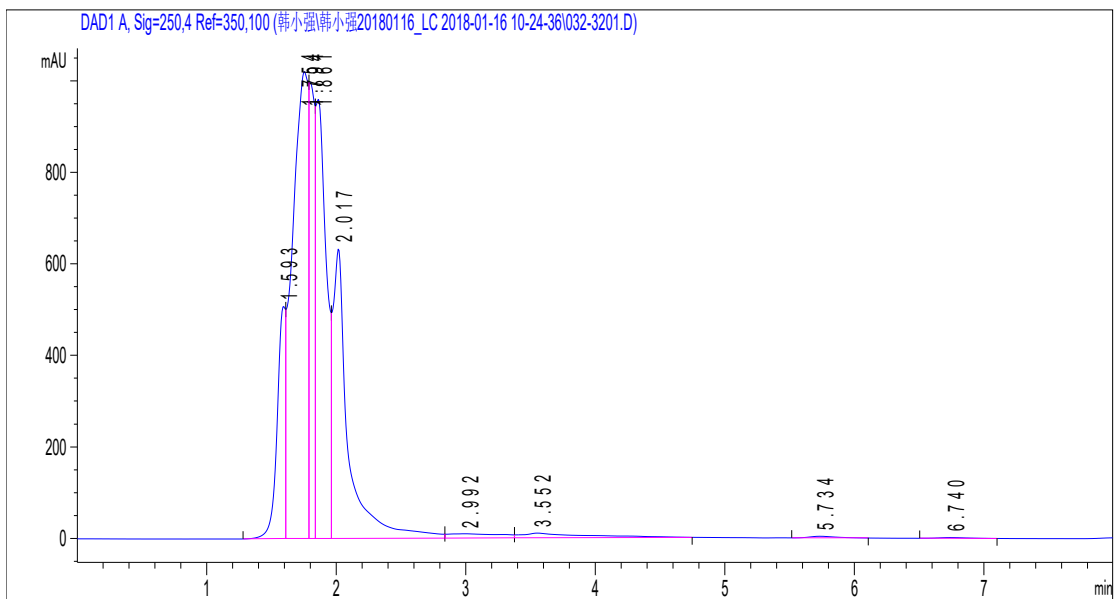


Figure S58 Sample of Cotton leaves (12d after spraying, 300g/ha- Middle layer, Shihezi, E85.809, N44.665)

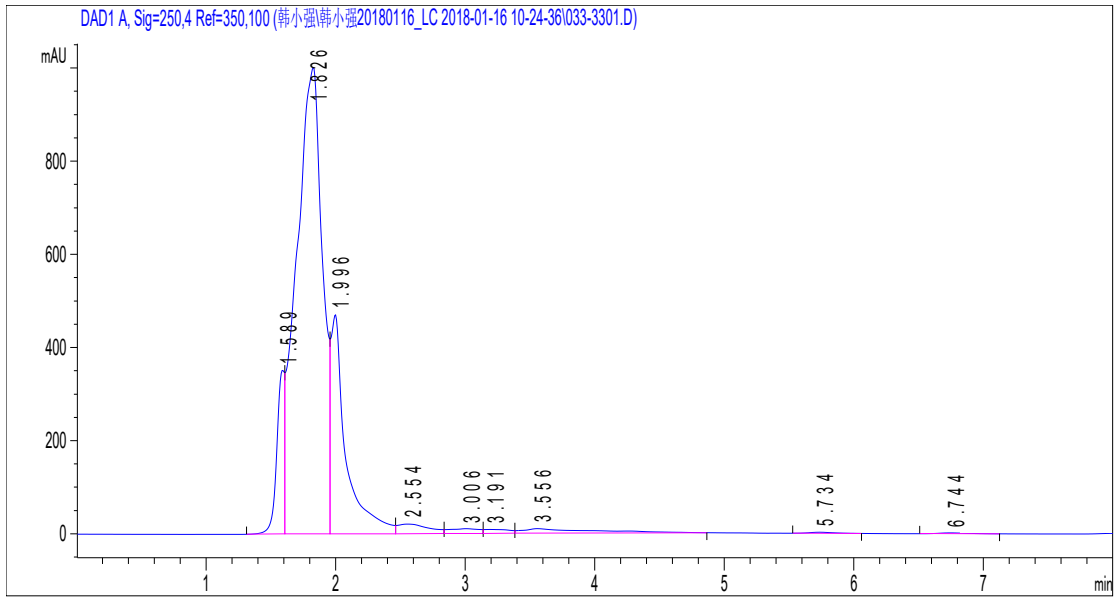


Figure S59 Sample of Cotton leaves (12d after spraying, 300g/ha- Lower layer, Shihezi, E85.809, N44.665)

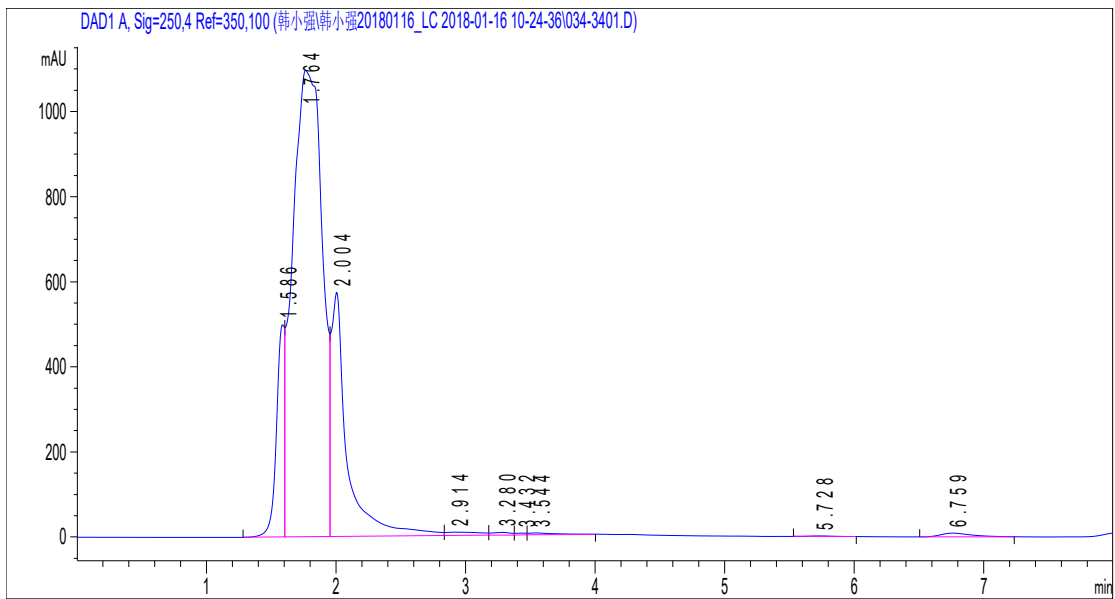


Figure S60 Sample of Cotton leaves (12d after spraying, 450g/ha- Middle layer, Shihezi, E85.809, N44.665)



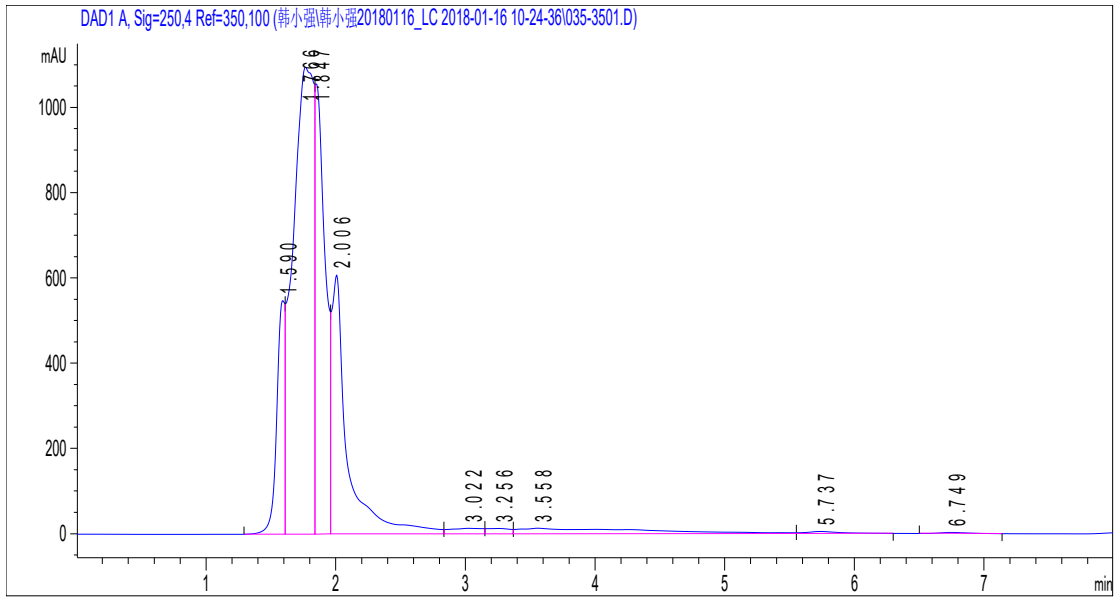


Figure S61 Sample of Cotton leaves (12d after spraying, 450g/ha- Lower layer, Shihezi, E85.809, N44.665)

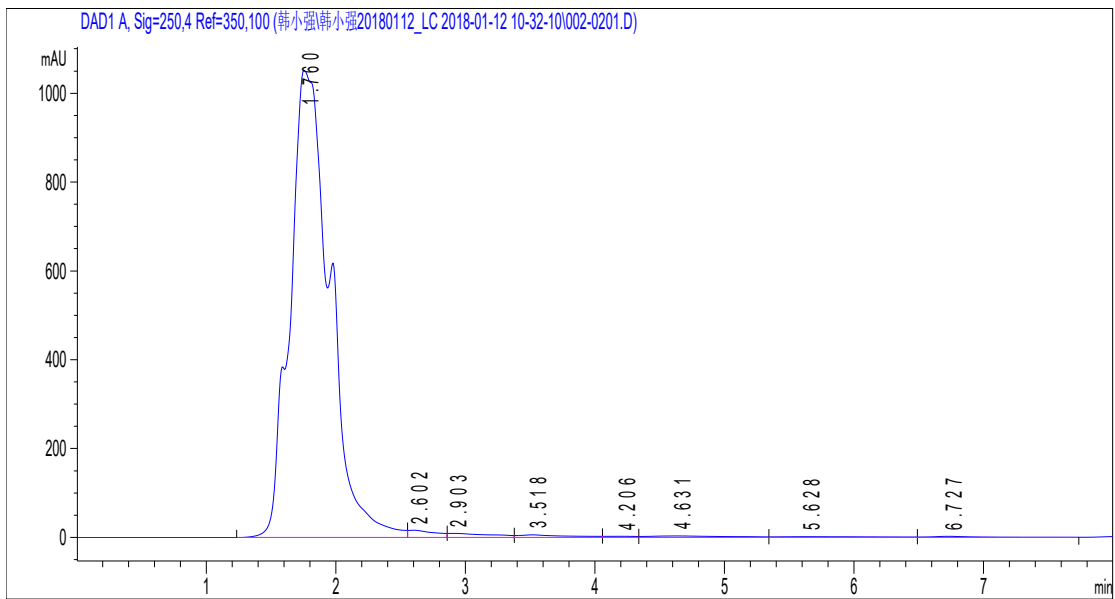


Figure S62 Sample of Cotton leaves (CK- Upper layer, Shihezi, E86.058, N44.945)

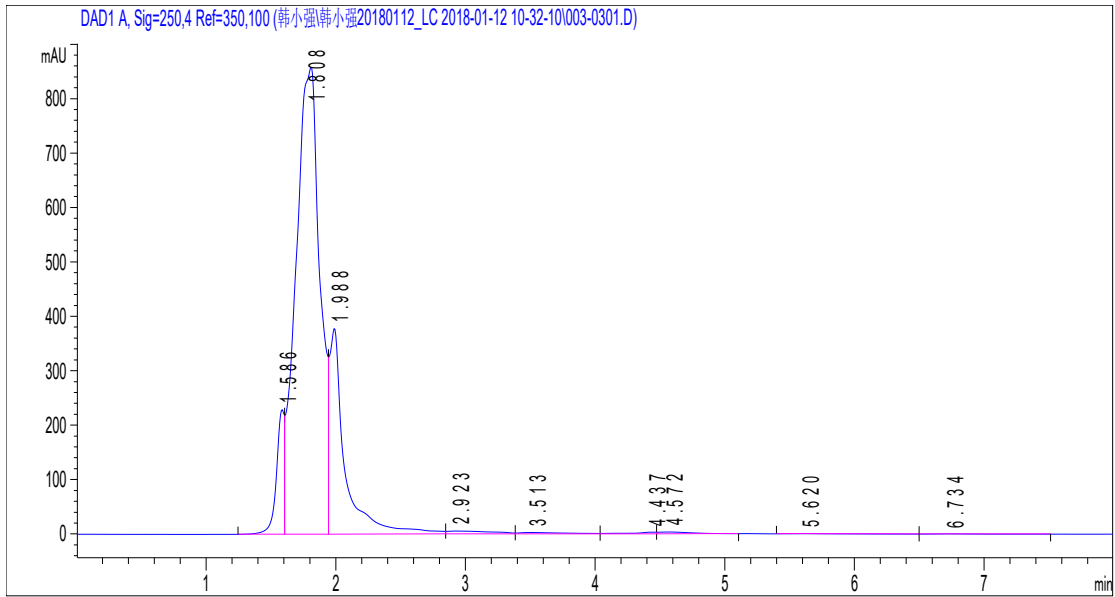


Figure S63 Sample of Cotton leaves (CK- Middle layer, Shihezi, E86.058, N44.945)

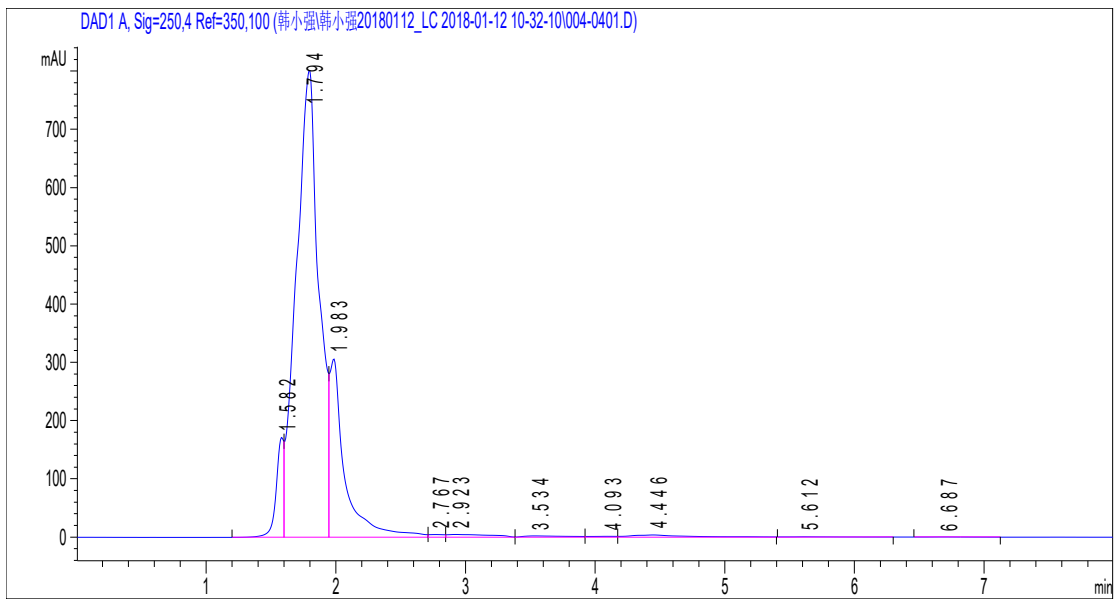


Figure S64 Sample of Cotton leaves (CK- Lower layer, Shihezi, E86.058, N44.945)

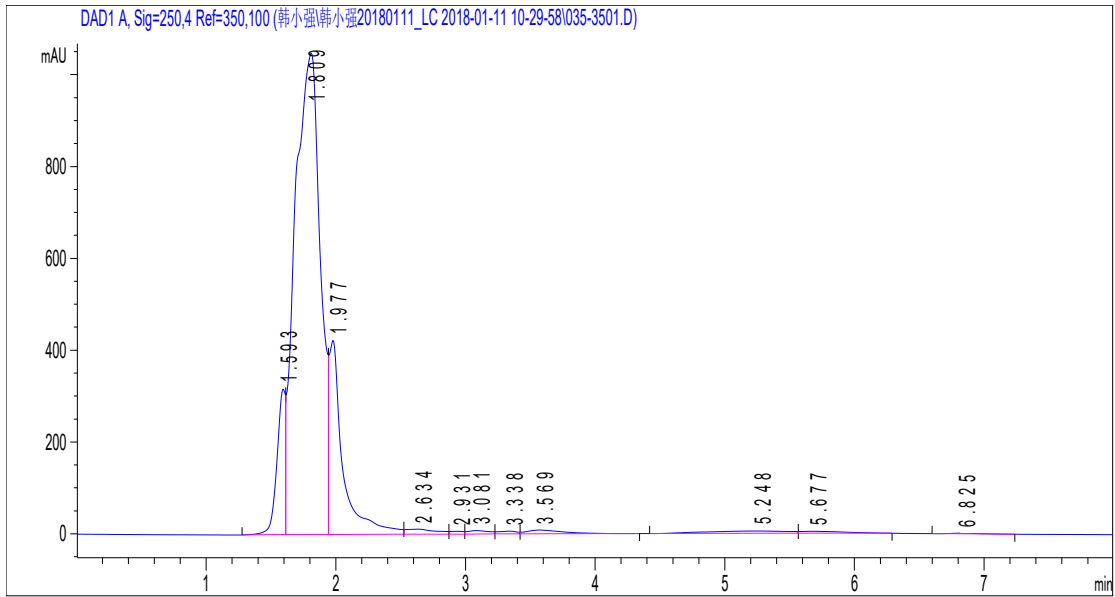


Figure S65 Sample of Cotton leaves (1d after spraying, 9.3L/ha- Upper layer, Shihezi, E86.058, N44.945)

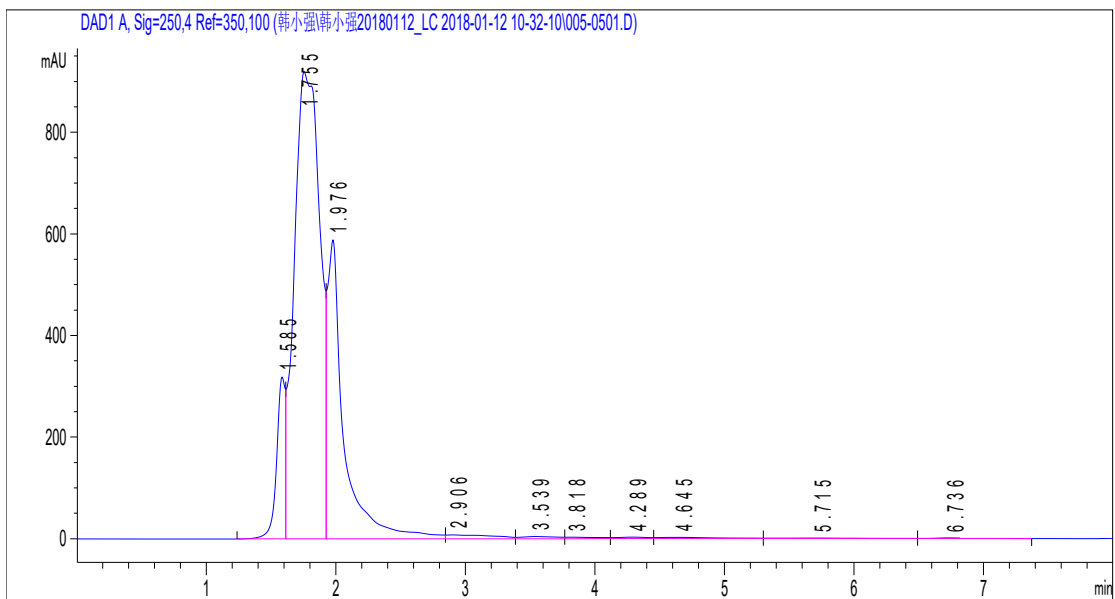


Figure S66 Sample of Cotton leaves (1d after spraying, 9.3L/ha- Middle layer, Shihezi, E86.058, N44.945)

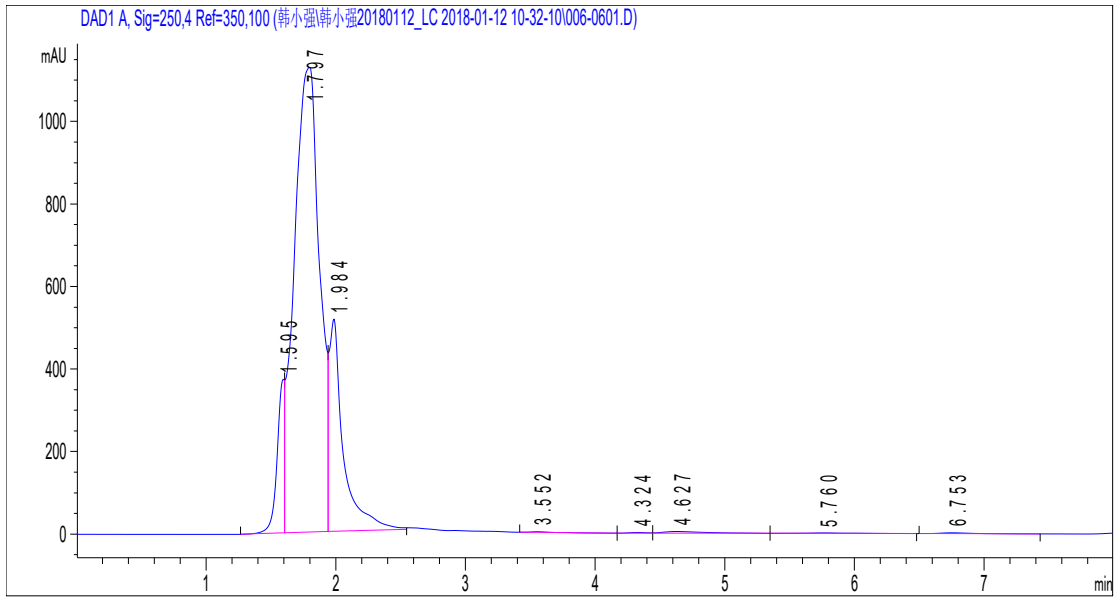


Figure S67 Sample of Cotton leaves (1d after spraying, 9.3L/ha- Lower layer, Shihezi, E86.058, N44.945)

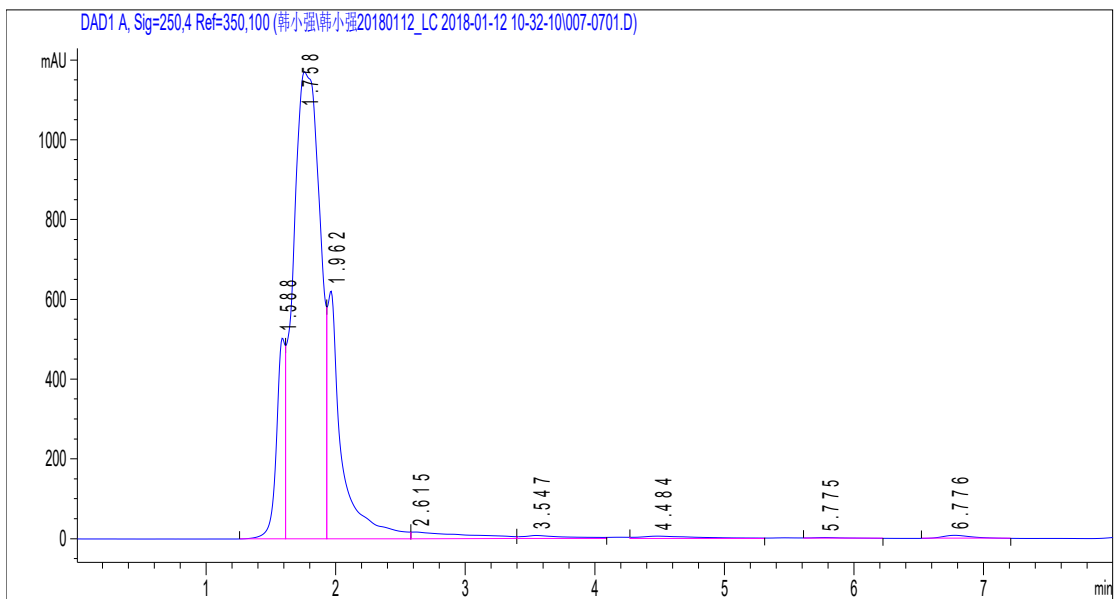


Figure S68 Sample of Cotton leaves (1d after spraying, 17.6L/ha- Upper layer, Shihezi, E86.058, N44.945)

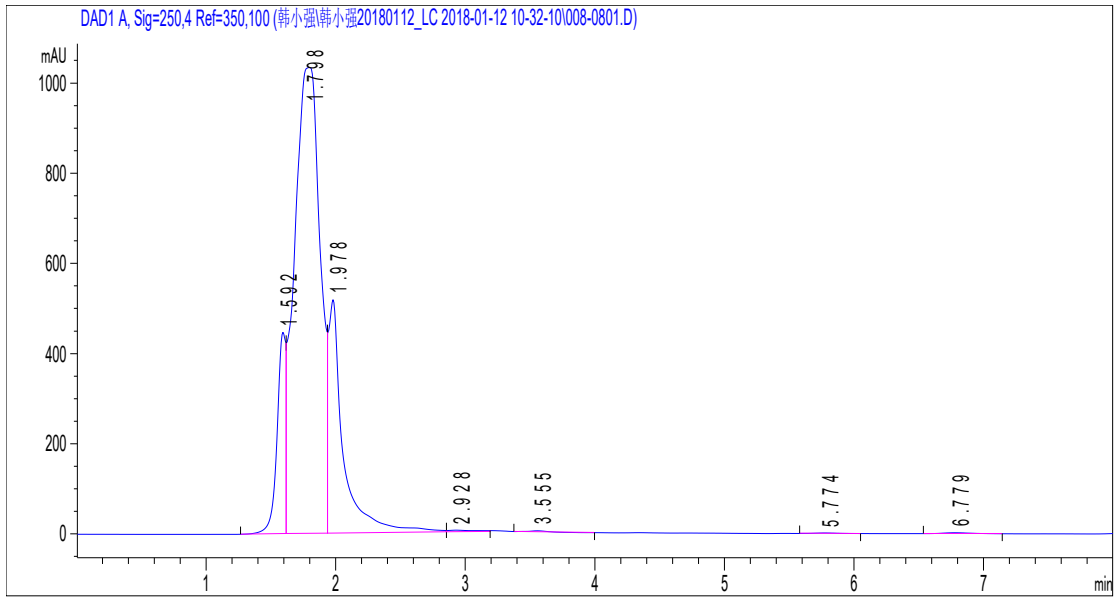


Figure S69 Sample of Cotton leaves (1d after spraying, 17.6L/ha- Middle layer, Shihezi, E86.058, N44.945)

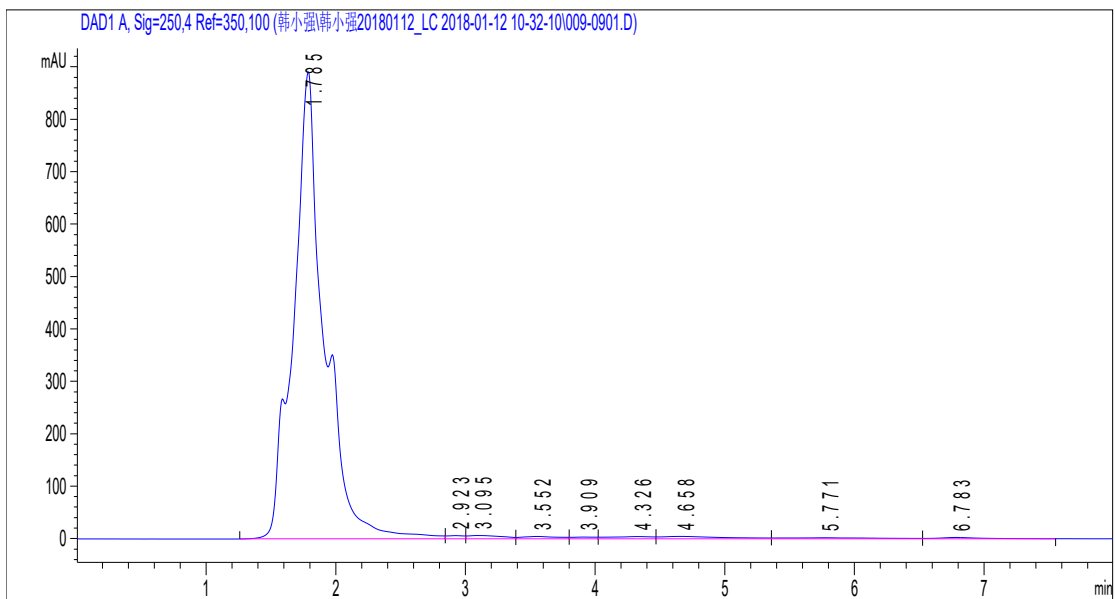


Figure S70 Sample of Cotton leaves (1d after spraying, 17.6L/ha- Lower layer, Shihezi, E86.058, N44.945)

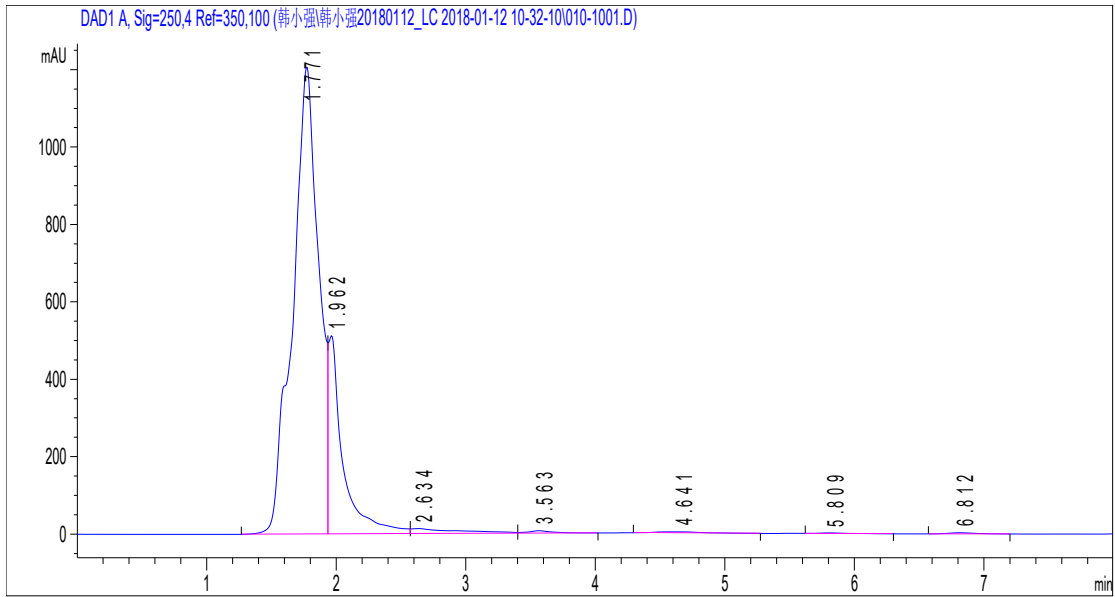


Figure S71 Sample of Cotton leaves (1d after spraying, 24.2L/ha- Upper layer, Shihezi, E86.058, N44.945)

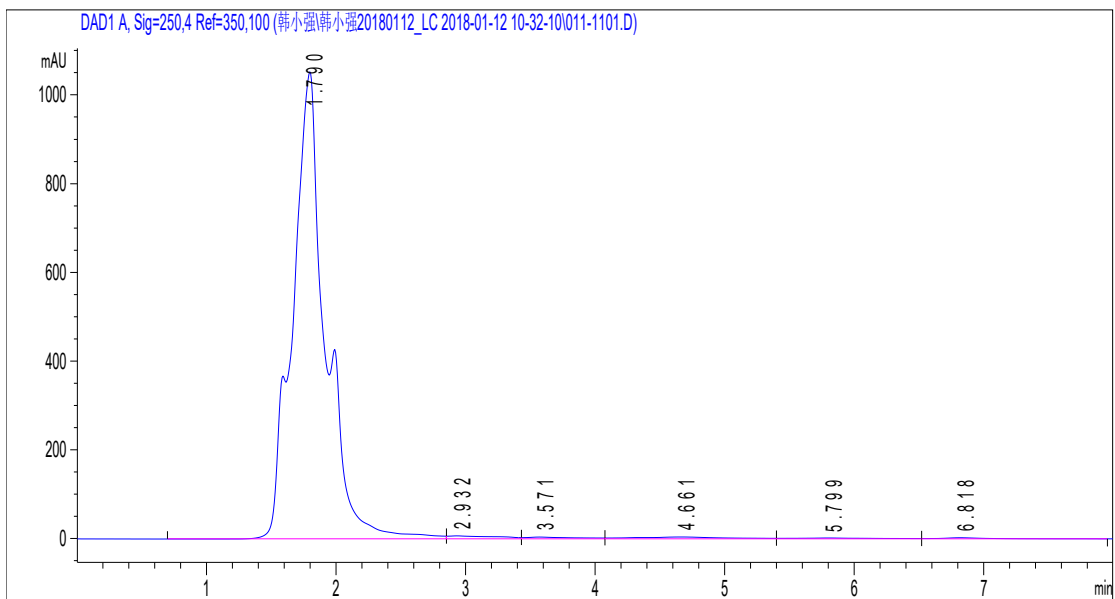


Figure S72 Sample of Cotton leaves (1d after spraying, 24.2L/ha- Middle layer, Shihezi, E86.058, N44.945)

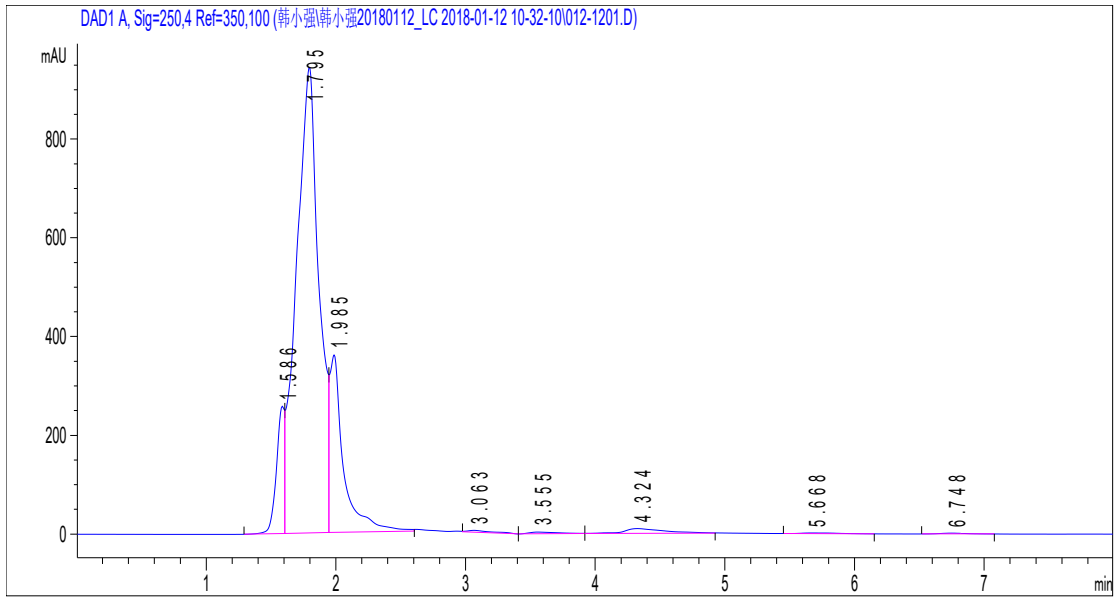


Figure S73 Sample of Cotton leaves (1d after spraying, 24.2L/ha- Lower layer, Shihezi, E86.058, N44.945)

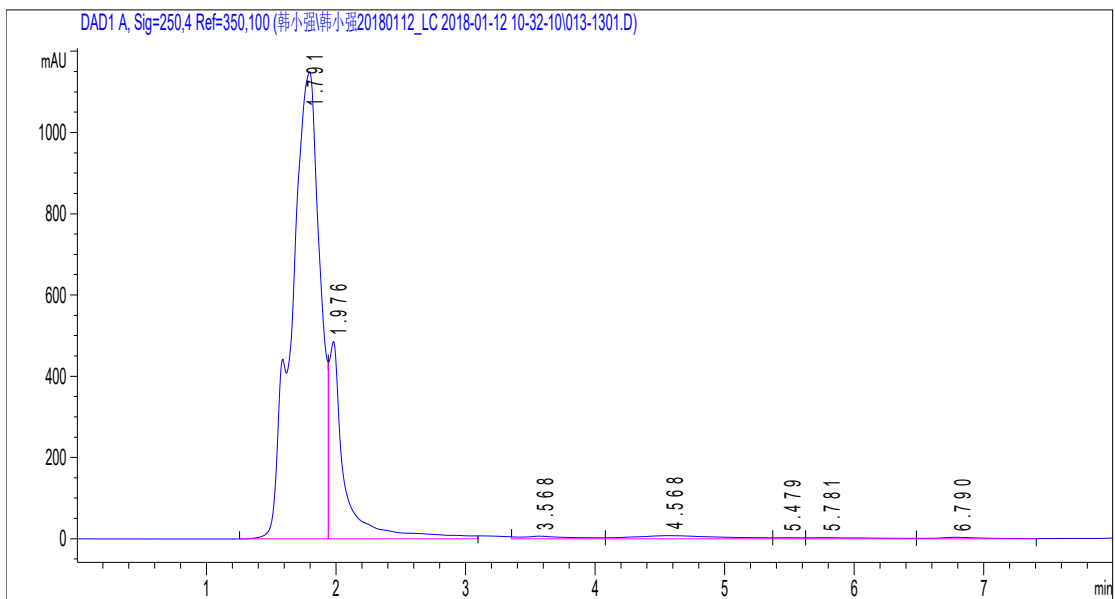


Figure S74 Sample of Cotton leaves (1d after spraying, 29.0L/ha- Upper layer, Shihezi, E86.058, N44.945)

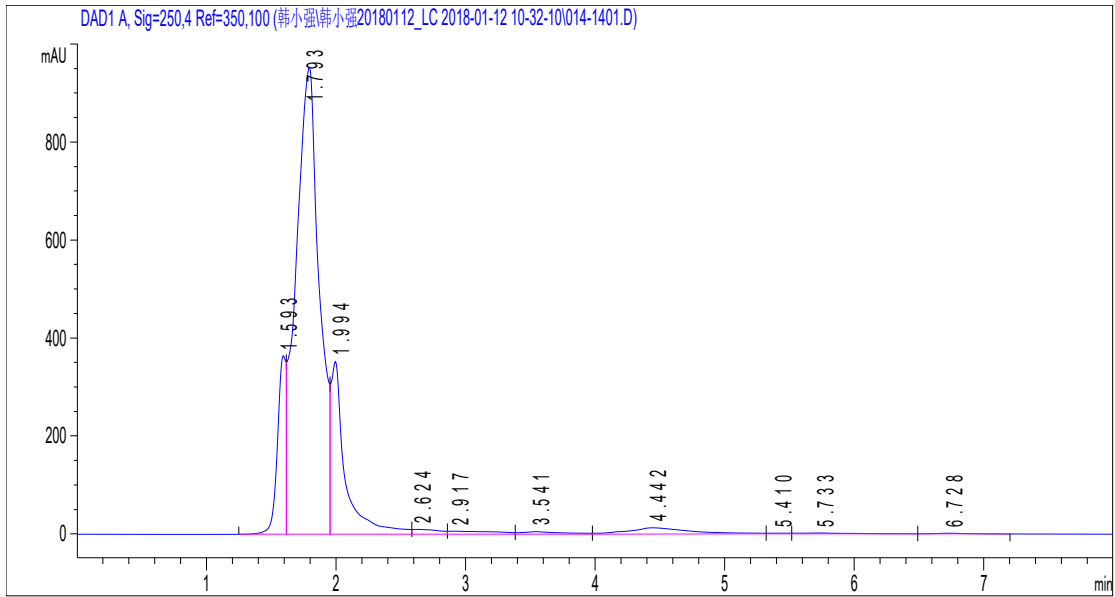


Figure S75 Sample of Cotton leaves (1d after spraying, 29.0L/ha- Middle layer, Shihezi, E86.058, N44.945)

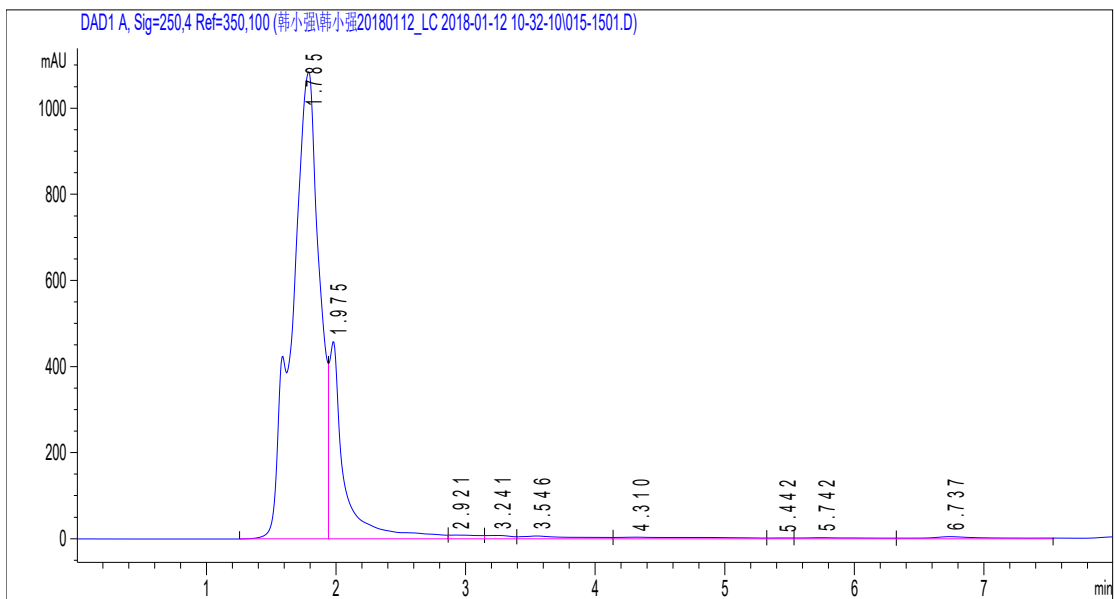


Figure S78 Sample of Cotton leaves (1d after spraying, 29.0L/ha- Lower layer, Shihezi, E86.058, N44.945)



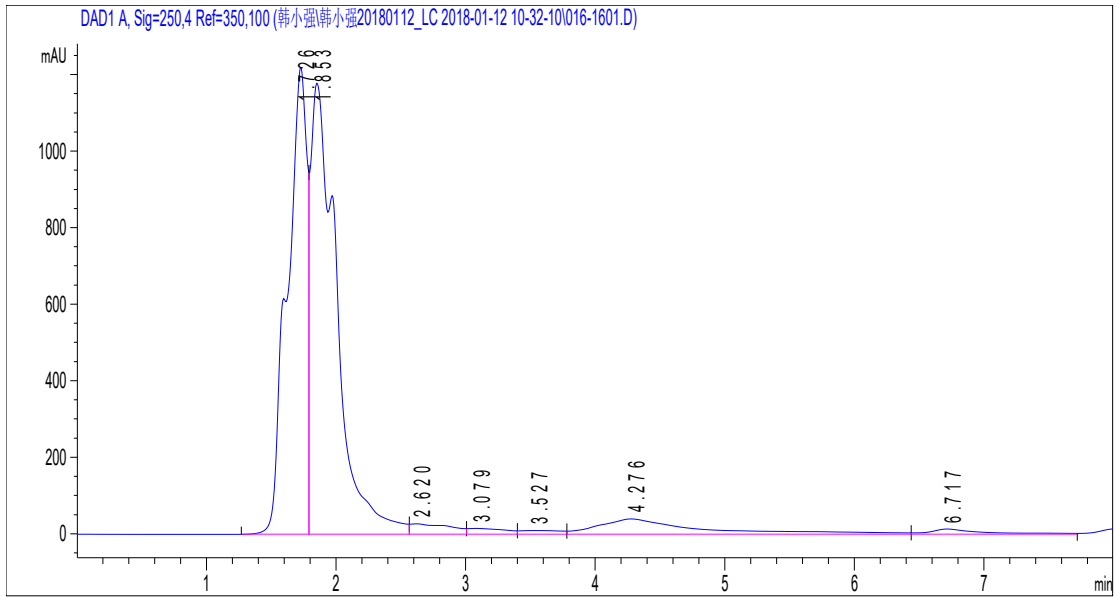


Figure S79 Sample of Cotton leaves (5d after spraying, 9.3L/ha- Upper layer, Shihezi, E86.058, N44.945)

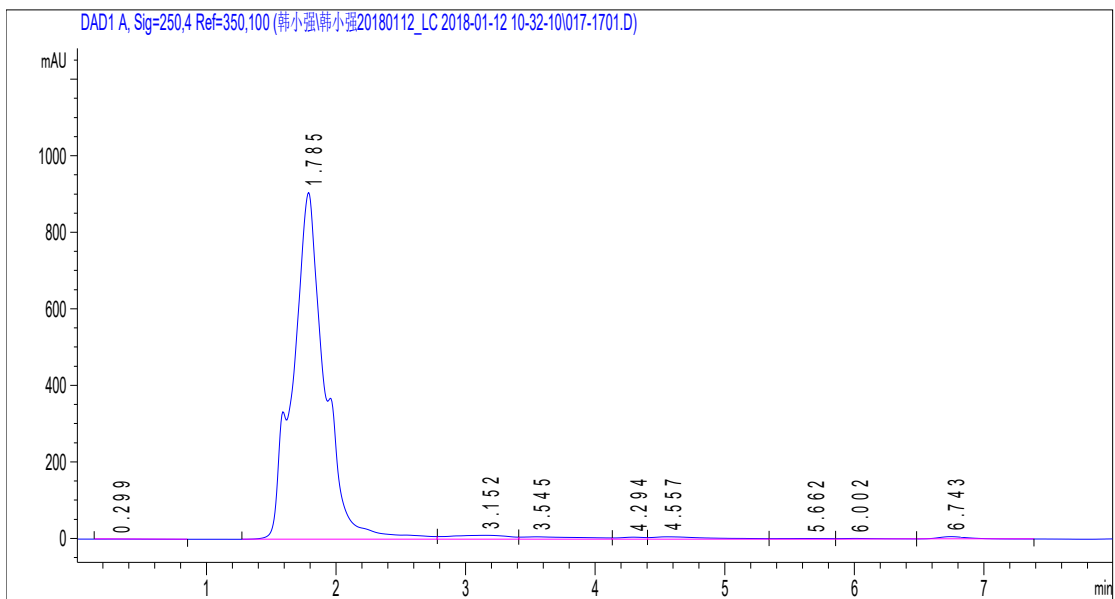


Figure S80 Sample of Cotton leaves (5d after spraying, 9.3L/ha- Middle layer, Shihezi, E86.058, N44.945)

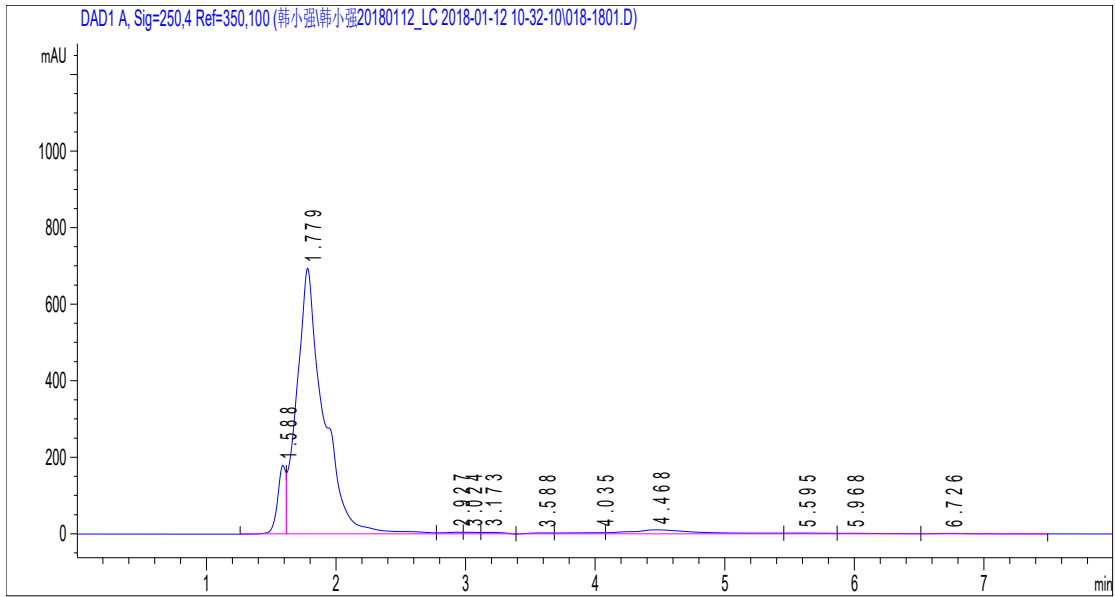


Figure S81 Sample of Cotton leaves (5d after spraying, 9.3L/ha- Lower layer, Shihezi, E86.058, N44.945)

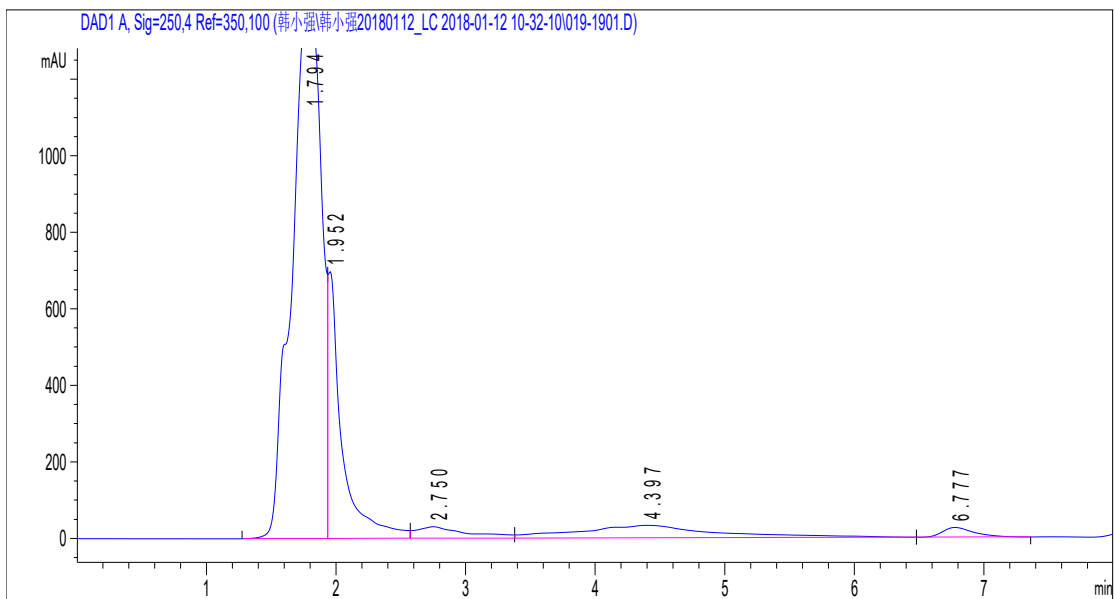


Figure S82 Sample of Cotton leaves (5d after spraying, 17.6L/ha- Upper layer, Shihezi, E86.058, N44.945)

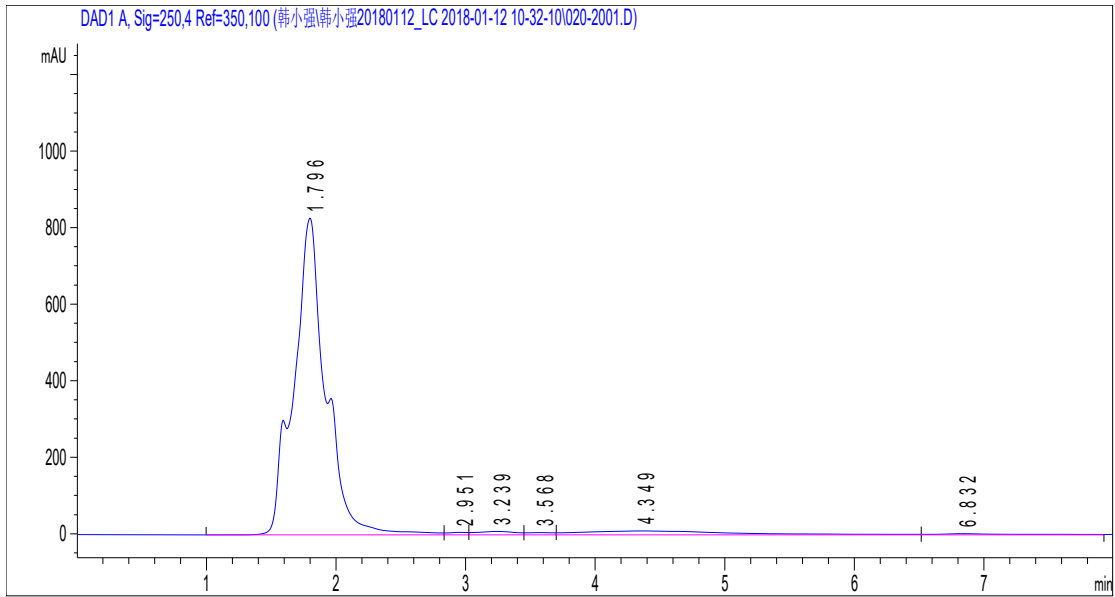


Figure S83 Sample of Cotton leaves (5d after spraying, 17.6L/ha- Middle layer, Shihezi, E86.058, N44.945)

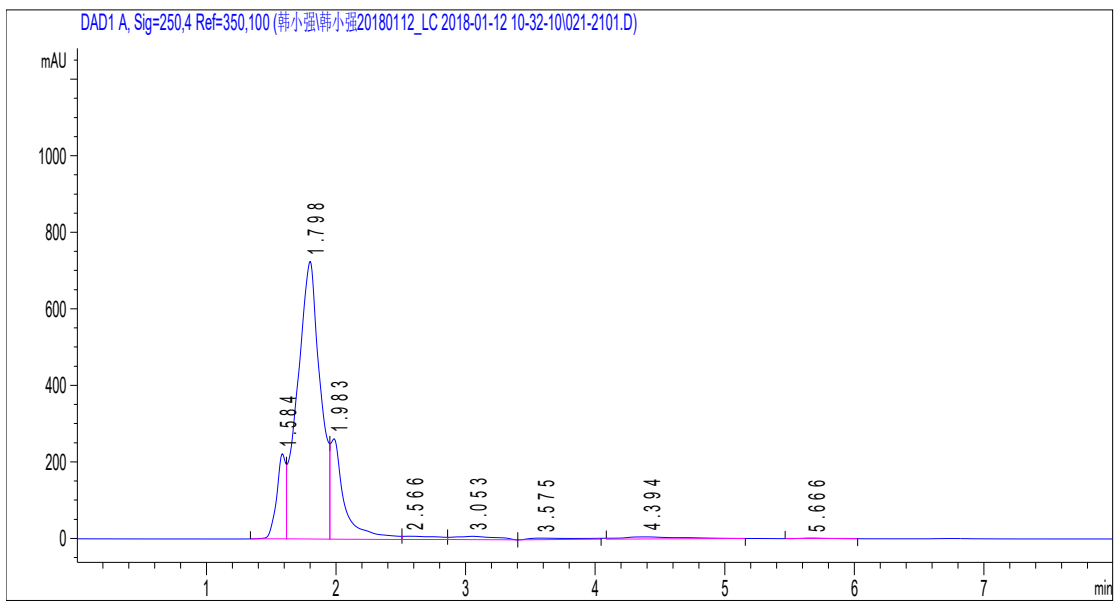


Figure S84 Sample of Cotton leaves (5d after spraying, 17.6L/ha- Lower layer, Shihezi, E86.058, N44.945)

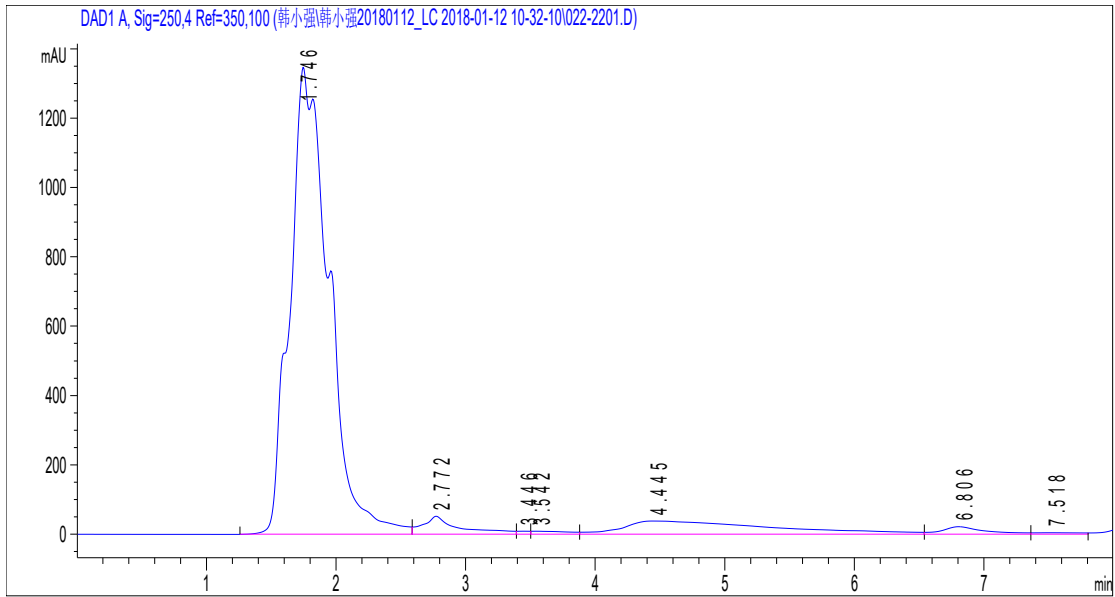


Figure S85 Sample of Cotton leaves (5d after spraying, 24.2L/ha- Upper layer, Shihezi, E86.058, N44.945)

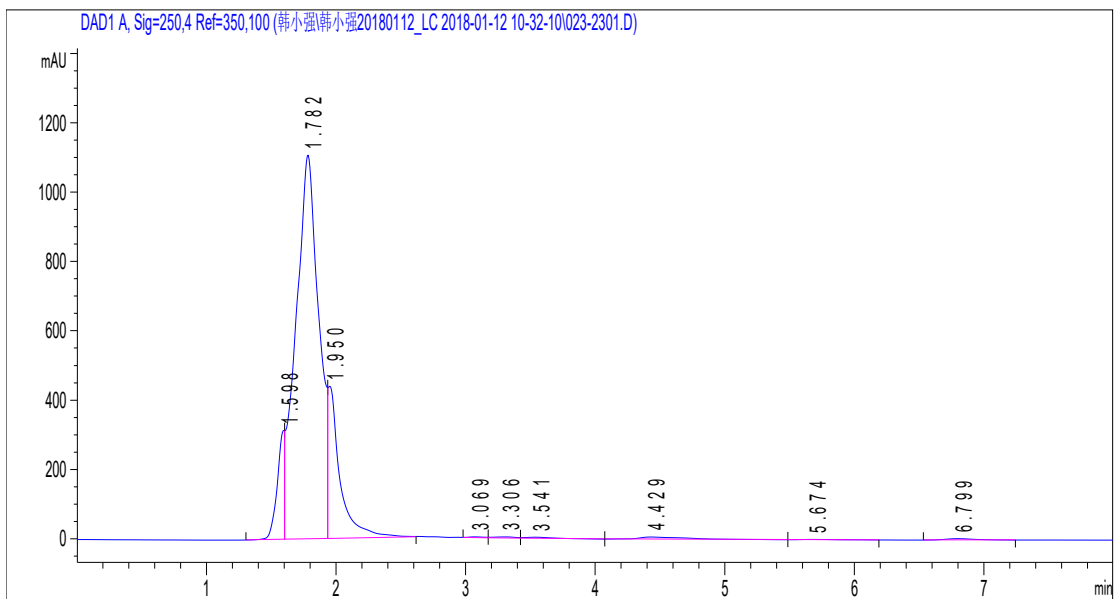


Figure S86 Sample of Cotton leaves (5d after spraying, 24.2L/ha- Middle layer, Shihezi, E86.058, N44.945)

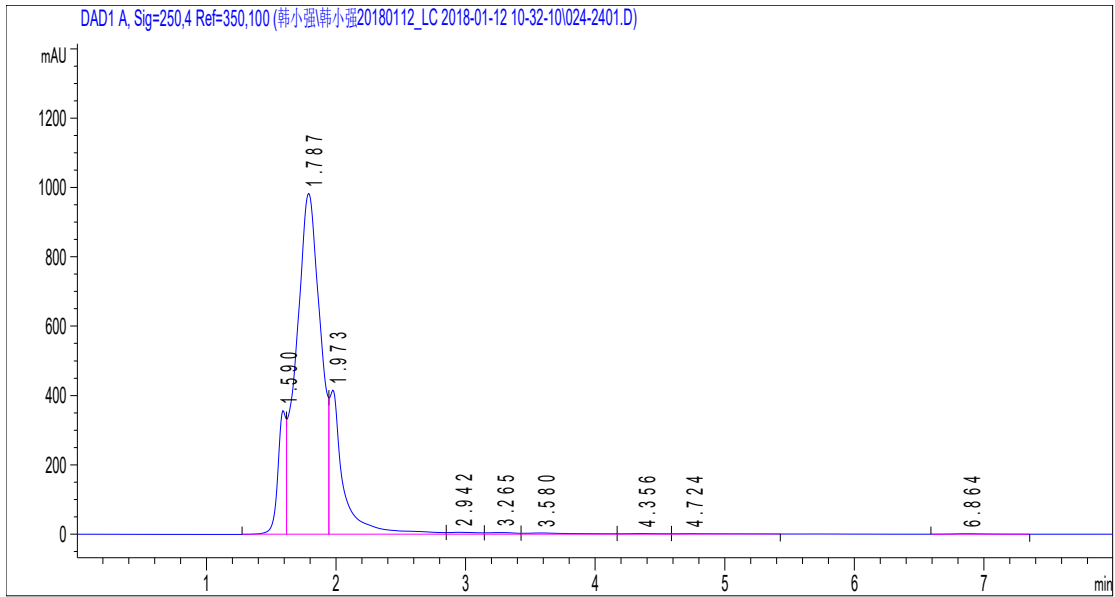


Figure S87 Sample of Cotton leaves (5d after spraying, 24.2L/ha- Lower layer, Shihezi, E86.058, N44.945)

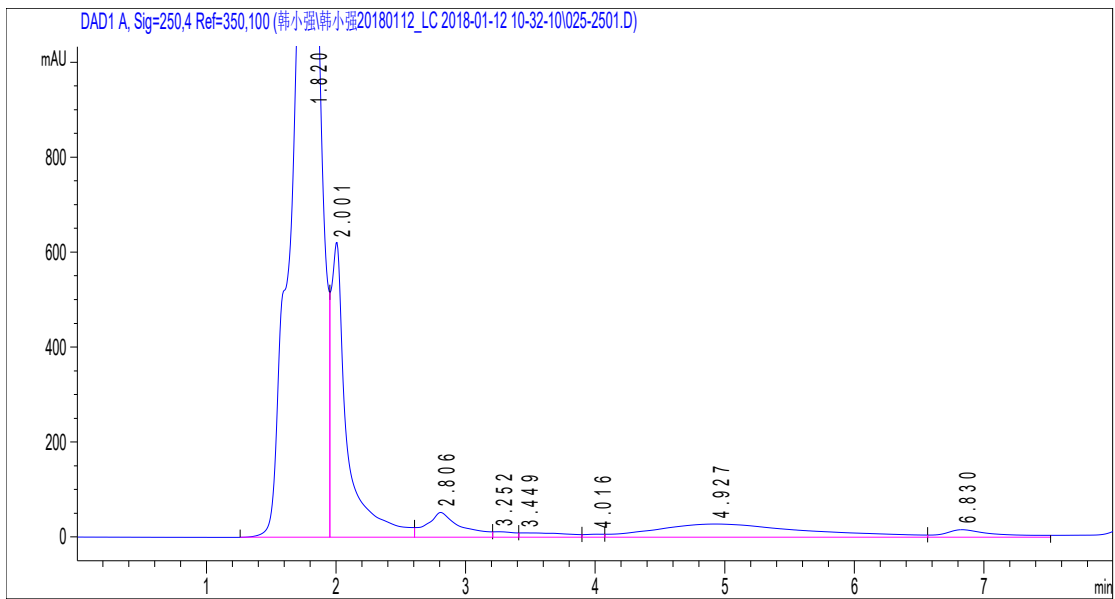


Figure S88 Sample of Cotton leaves (5d after spraying, 29.0L/ha- Upper layer, Shihezi, E86.058, N44.945)

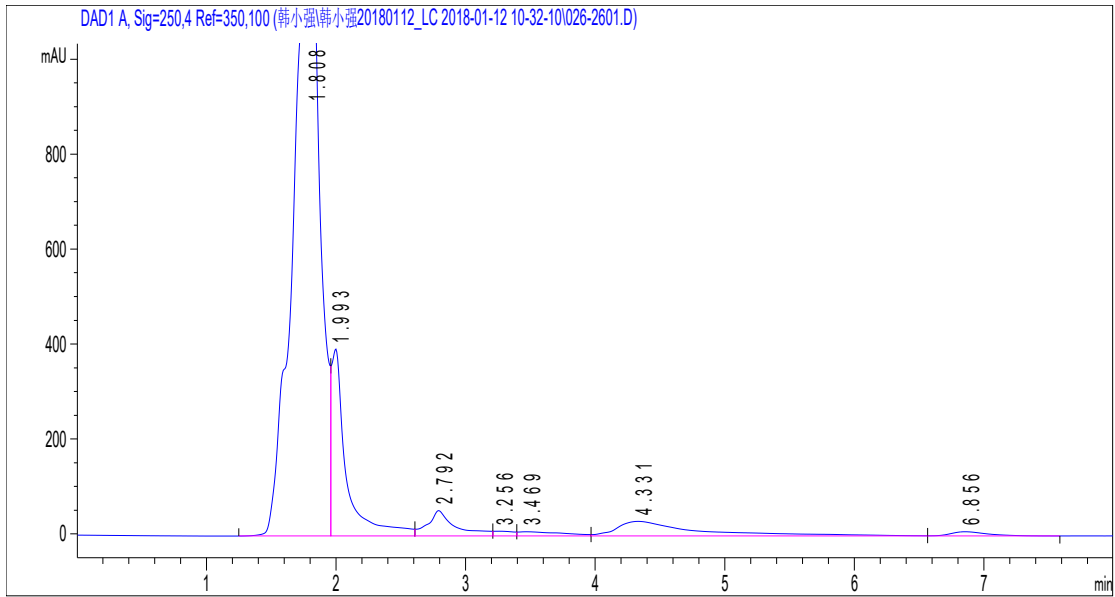


Figure S89 Sample of Cotton leaves (5d after spraying, 29.0L/ha- Middle layer, Shihezi, E86.058, N44.945)

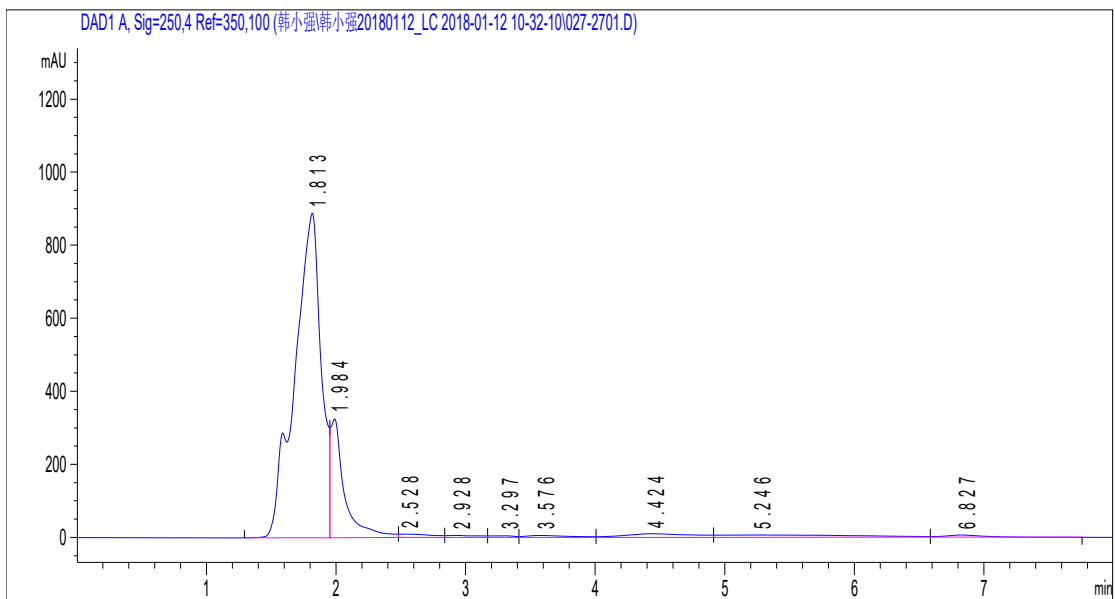


Figure S90 Sample of Cotton leaves (5d after spraying, 29.0L/ha- Lower layer, Shihezi, E86.058, N44.945)

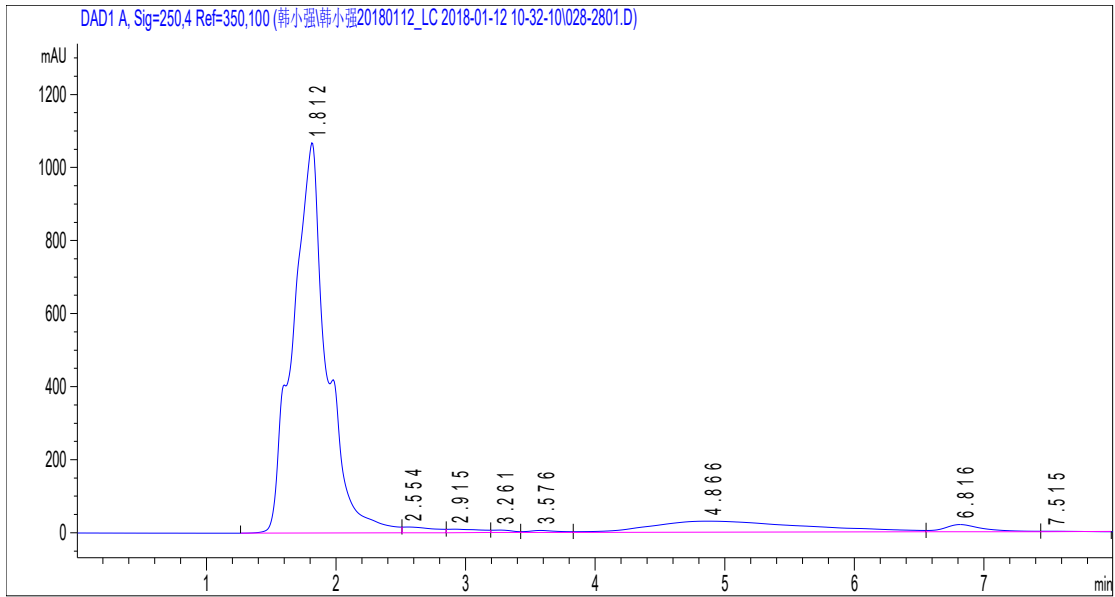


Figure S91 Sample of Cotton leaves (7d after spraying, 9.3L/ha- Upper layer, Shihezi, E86.058, N44.945)

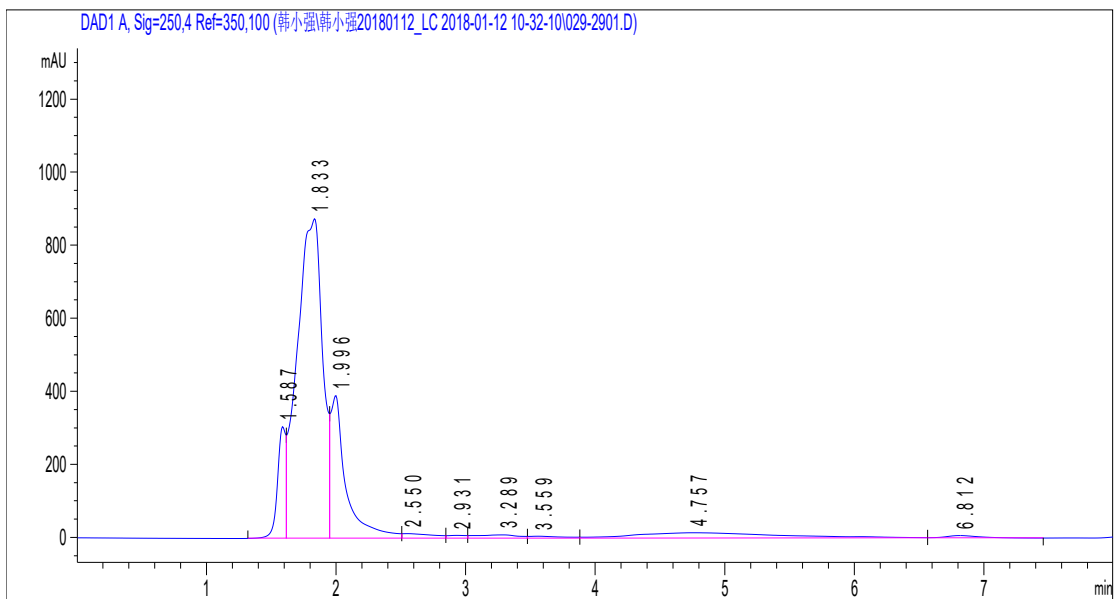


Figure S92 Sample of Cotton leaves (7d after spraying, 9.3L/ha- Middle layer, Shihezi, E86.058, N44.945)

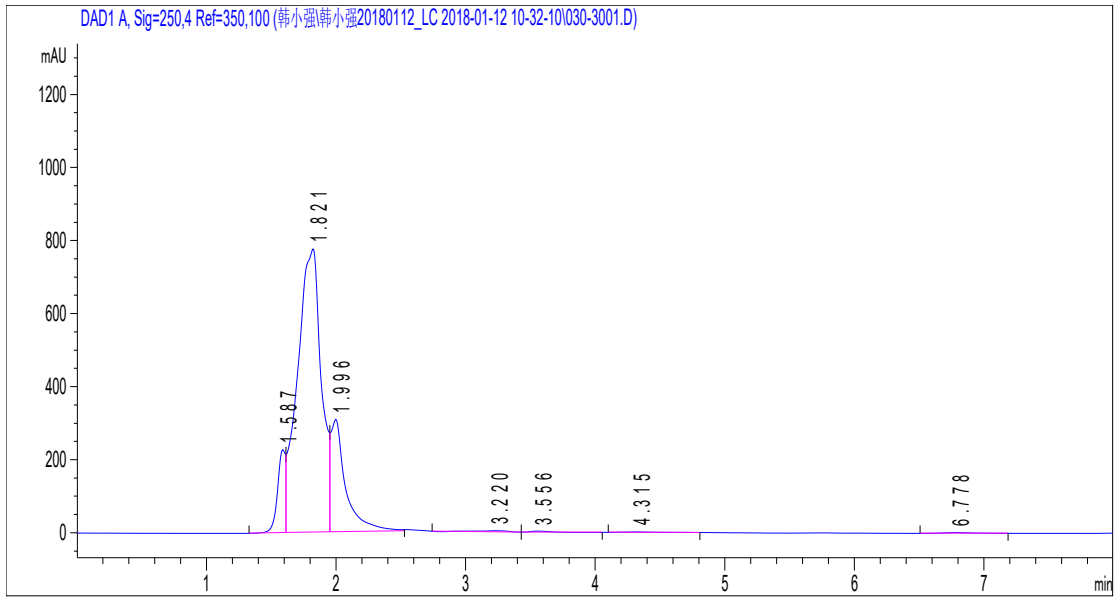


Figure S93 Sample of Cotton leaves (7d after spraying, 9.3L/ha- Lower layer, Shihezi, E86.058, N44.945)

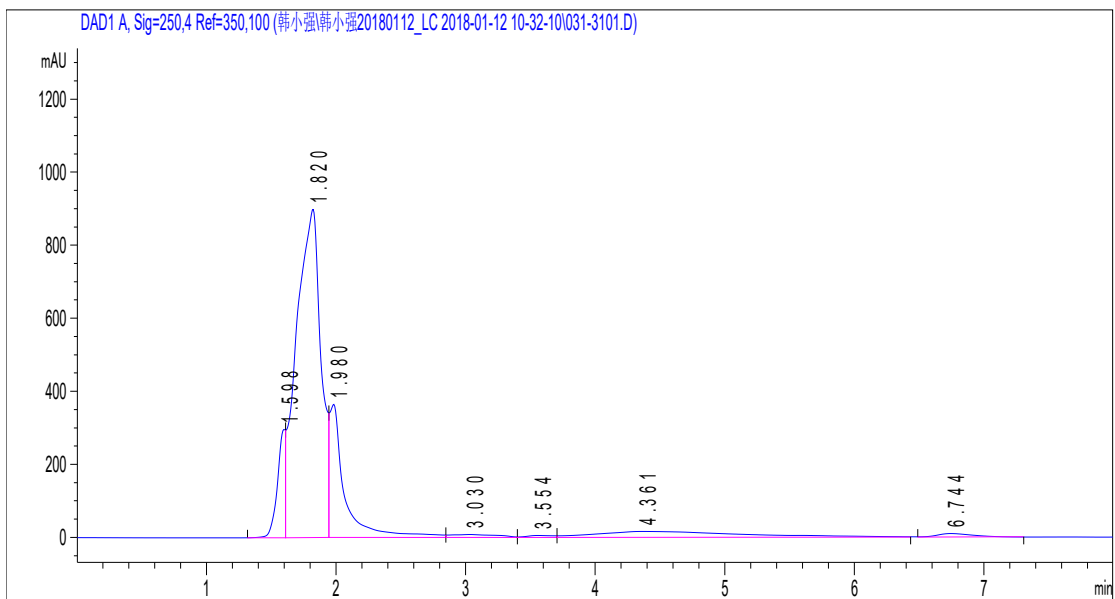


Figure S94 Sample of Cotton leaves (7d after spraying, 17.6L/ha- Upper layer, Shihezi, E86.058, N44.945)



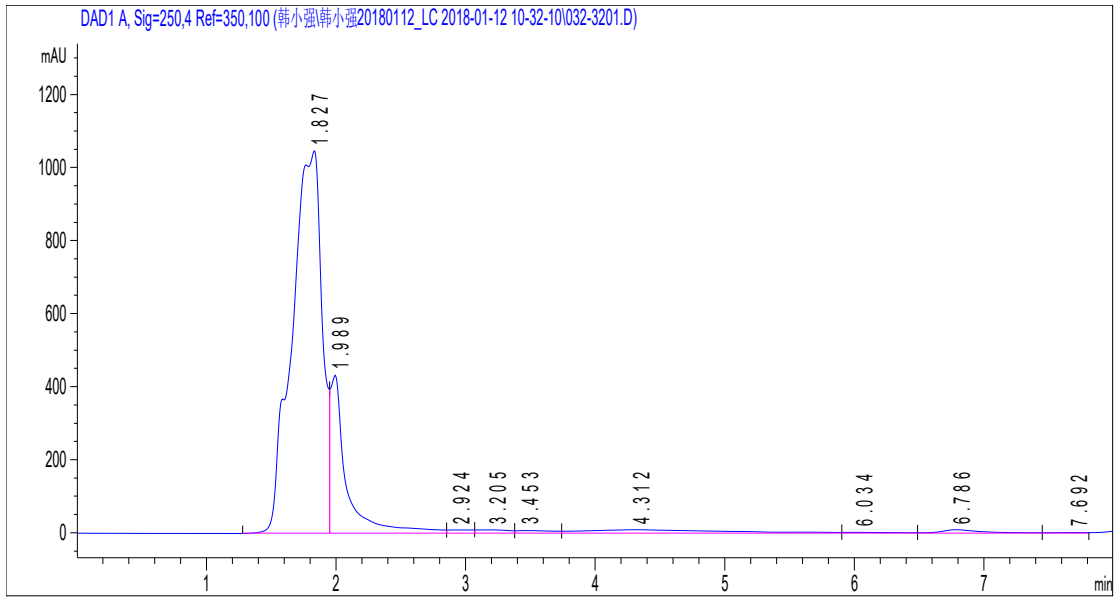


Figure S95 Sample of Cotton leaves (7d after spraying, 17.6L/ha- Middle layer, Shihezi, E86.058, N44.945)

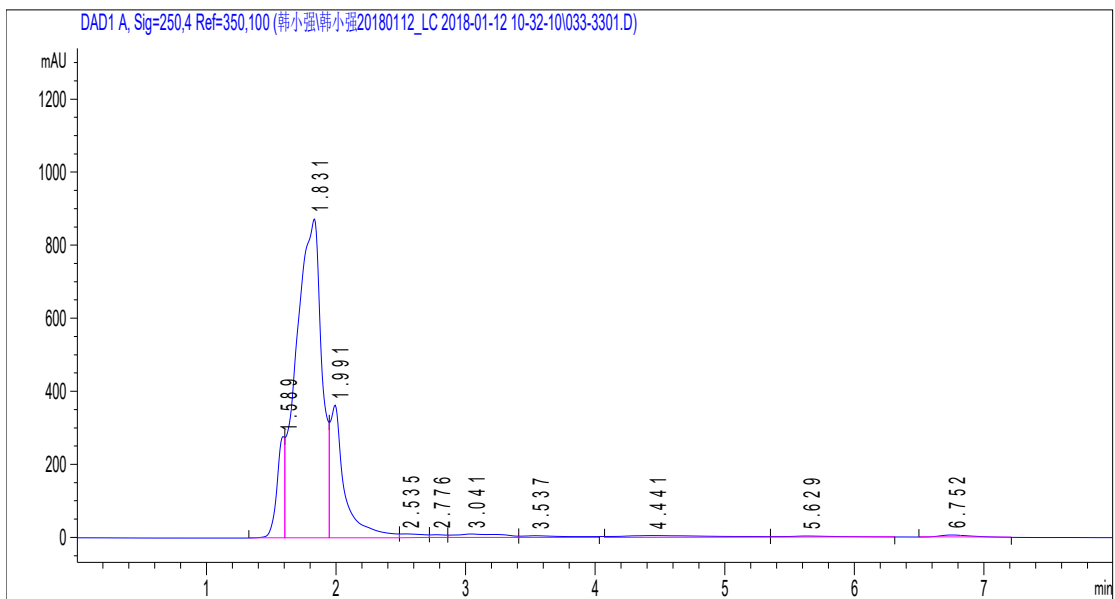


Figure S96 Sample of Cotton leaves (7d after spraying, 17.6L/ha- Lower layer, Shihezi, E86.058, N44.945)

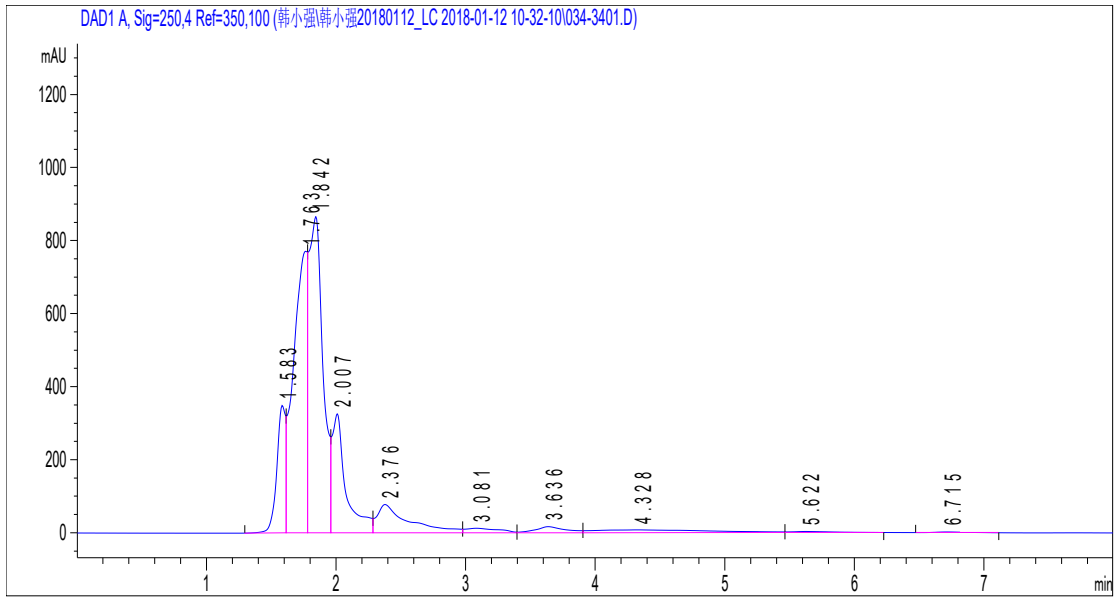


Figure S97 Sample of Cotton leaves (7d after spraying, 24.2L/ha- Upper layer, Shihezi, E86.058, N44.945)

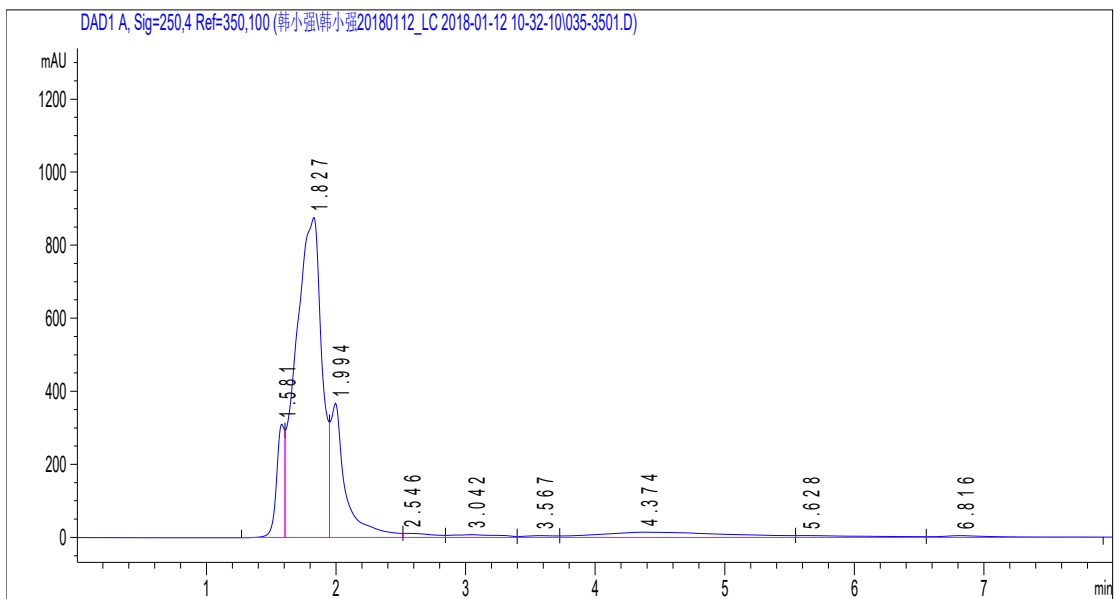


Figure S98 Sample of Cotton leaves (7d after spraying, 24.2L/ha- Middle layer, Shihezi, E86.058, N44.945)

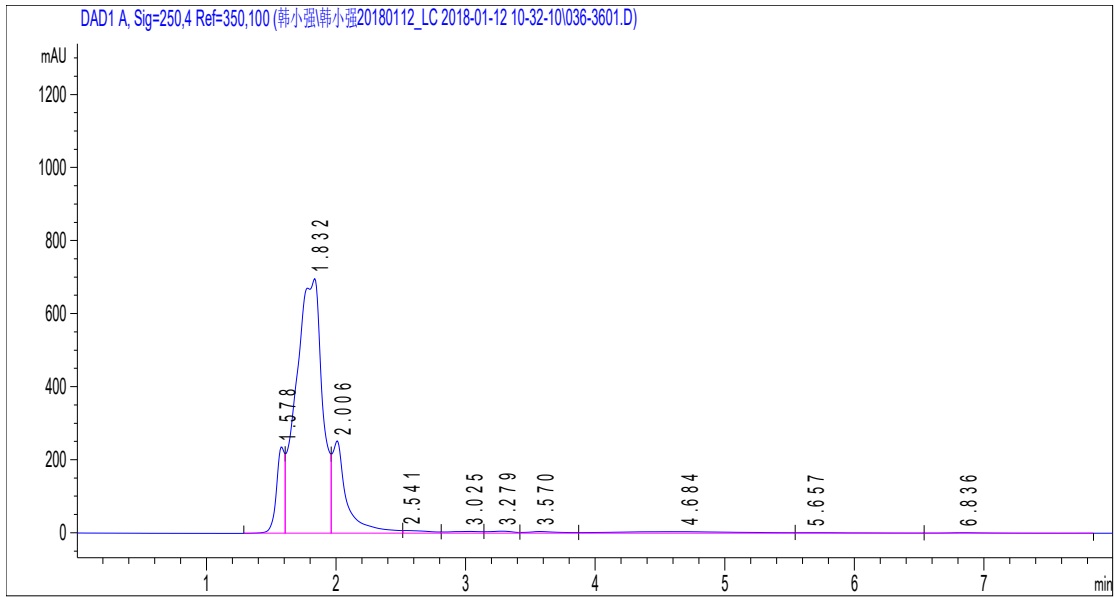


Figure S99 Sample of Cotton leaves (7d after spraying, 24.2L/ha- Lower layer, Shihezi, E86.058, N44.945)

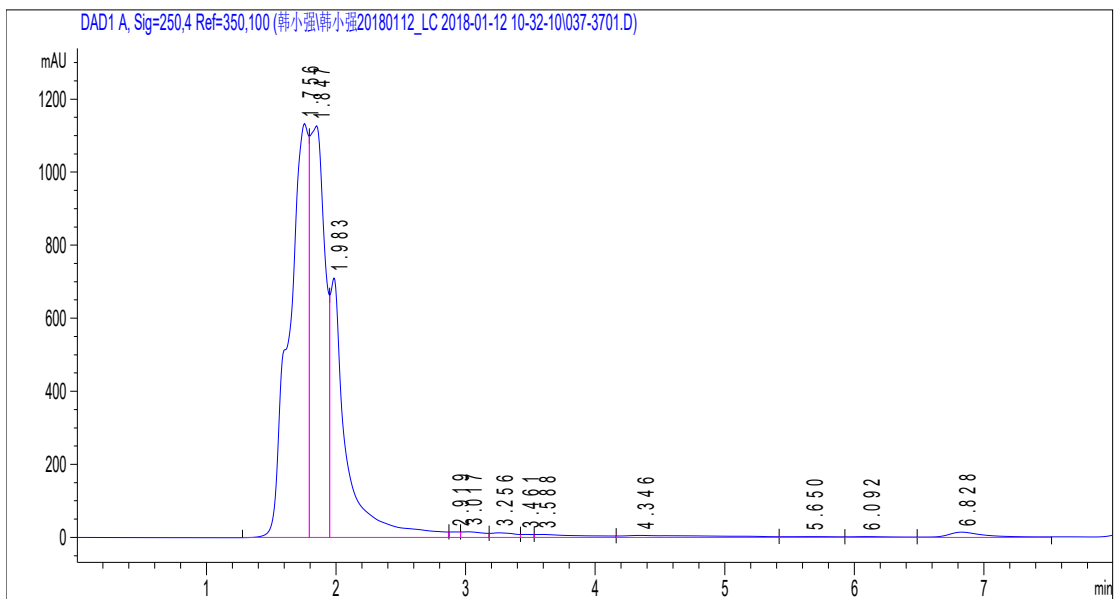


Figure S100 Sample of Cotton leaves (7d after spraying, 29.0L/ha- Upper layer, Shihezi, E86.058, N44.945)

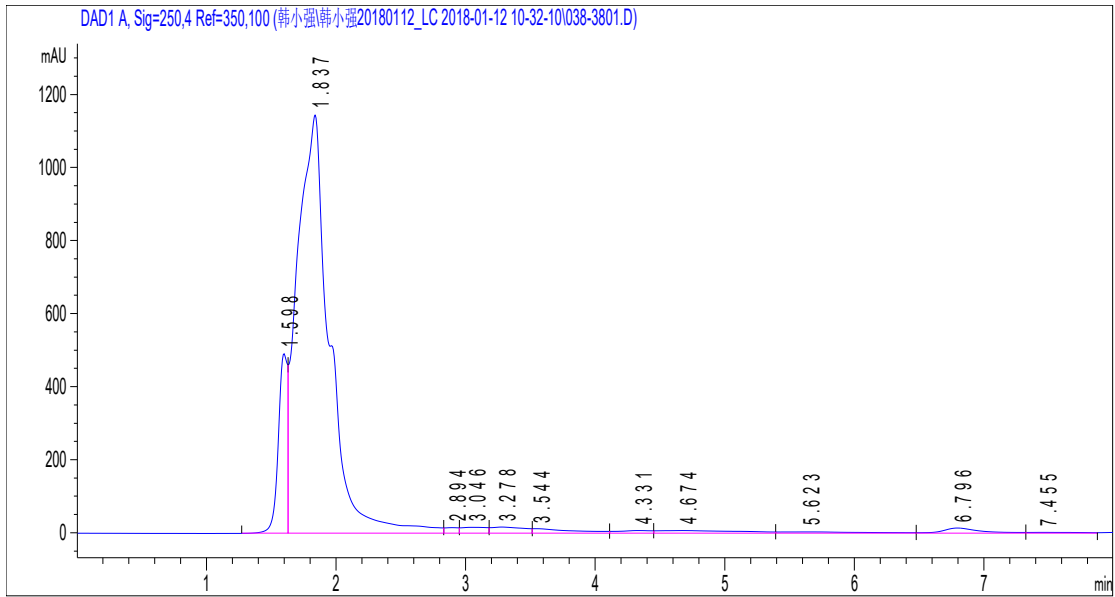


Figure S101 Sample of Cotton leaves (7d after spraying, 29.0L/ha- Middle layer, Shihezi, E86.058, N44.945)

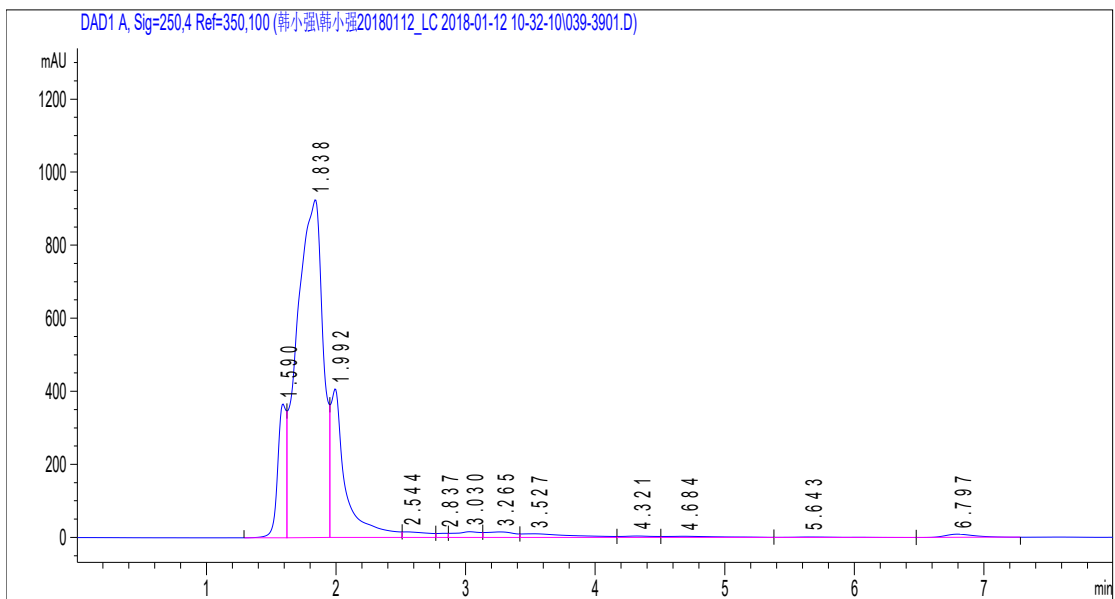


Figure S102 Sample of Cotton leaves (7d after spraying, 29.0L/ha- Lower layer, Shihezi, E86.058, N44.945)

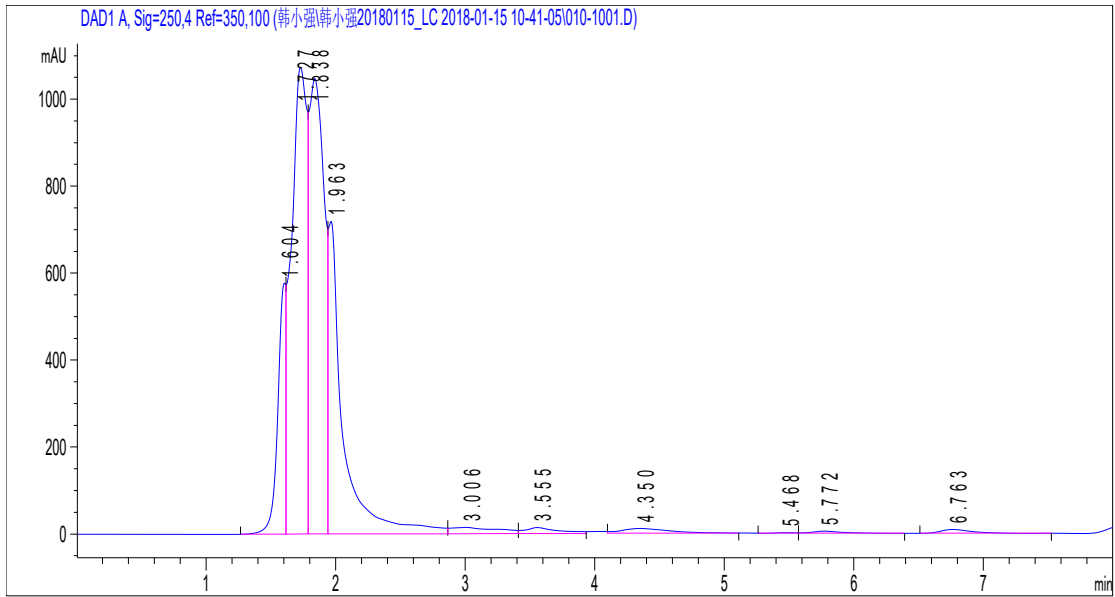


Figure S103 Sample of Cotton leaves (8d after spraying, 9.3L/ha- Upper layer, Shihezi, E86.058, N44.945)

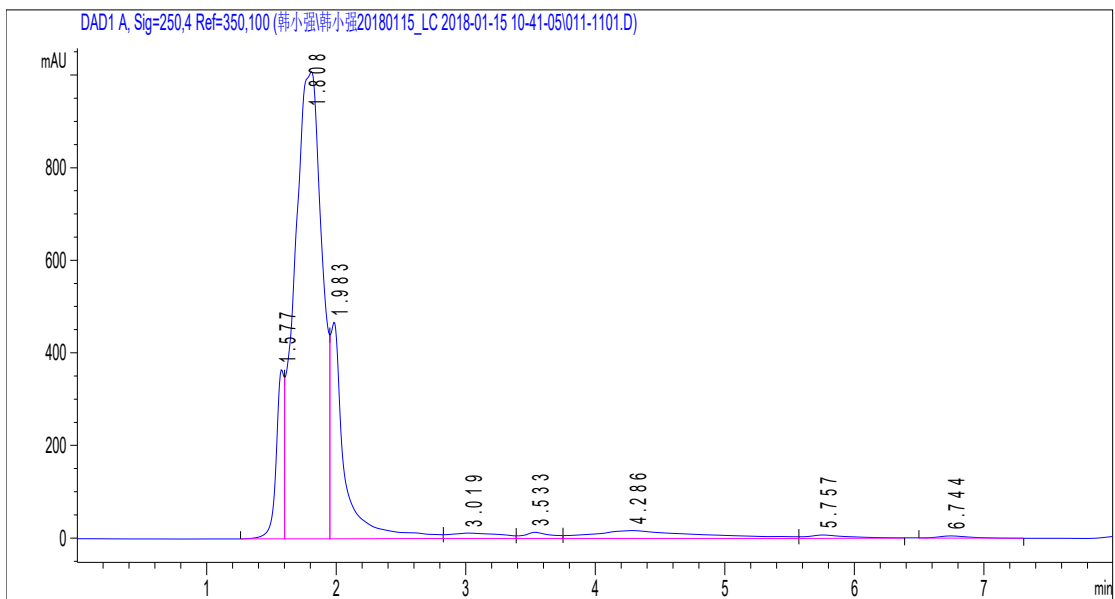


Figure S104 Sample of Cotton leaves (8d after spraying, 9.3L/ha- Middle layer, Shihezi, E86.058, N44.945)

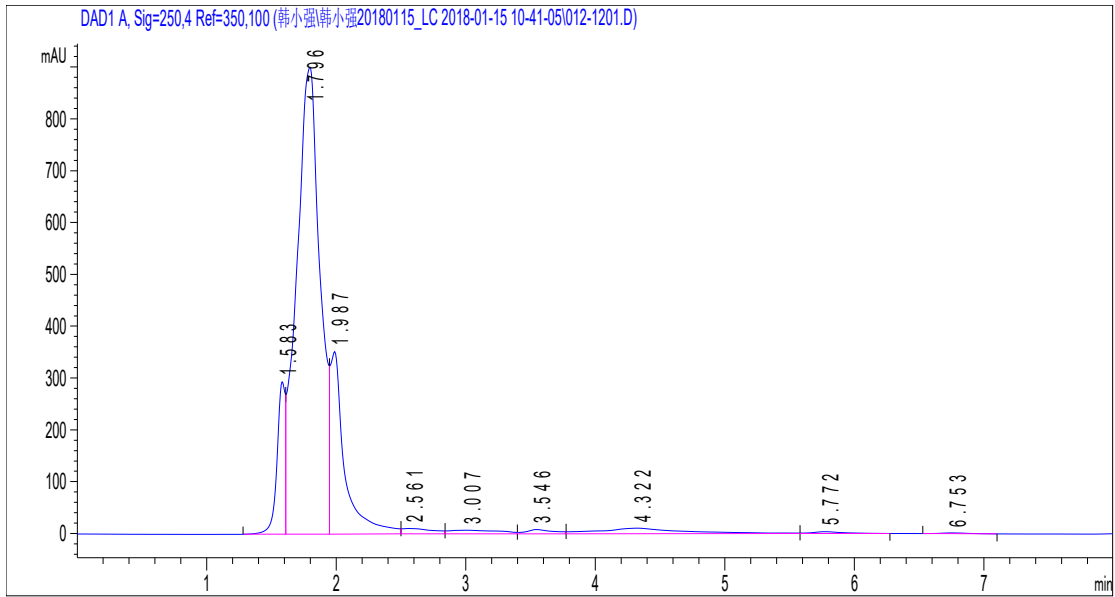


Figure S105 Sample of Cotton leaves (8d after spraying, 9.3L/ha- Lower layer, Shihezi, E86.058, N44.945)

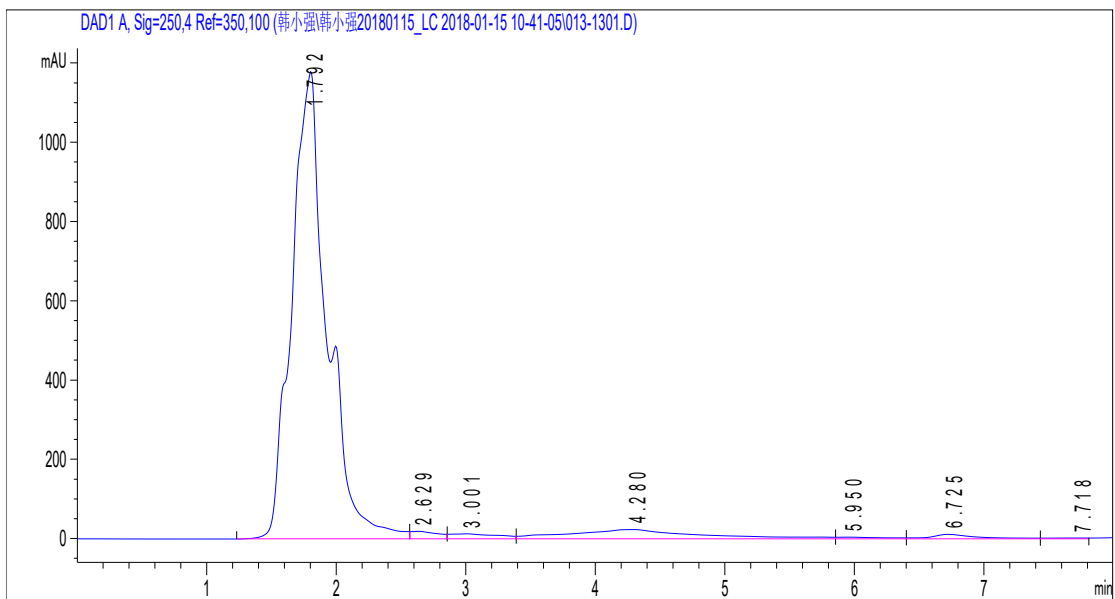


Figure S106 Sample of Cotton leaves (8d after spraying, 17.6L/ha- Upper layer, Shihezi, E86.058, N44.945)

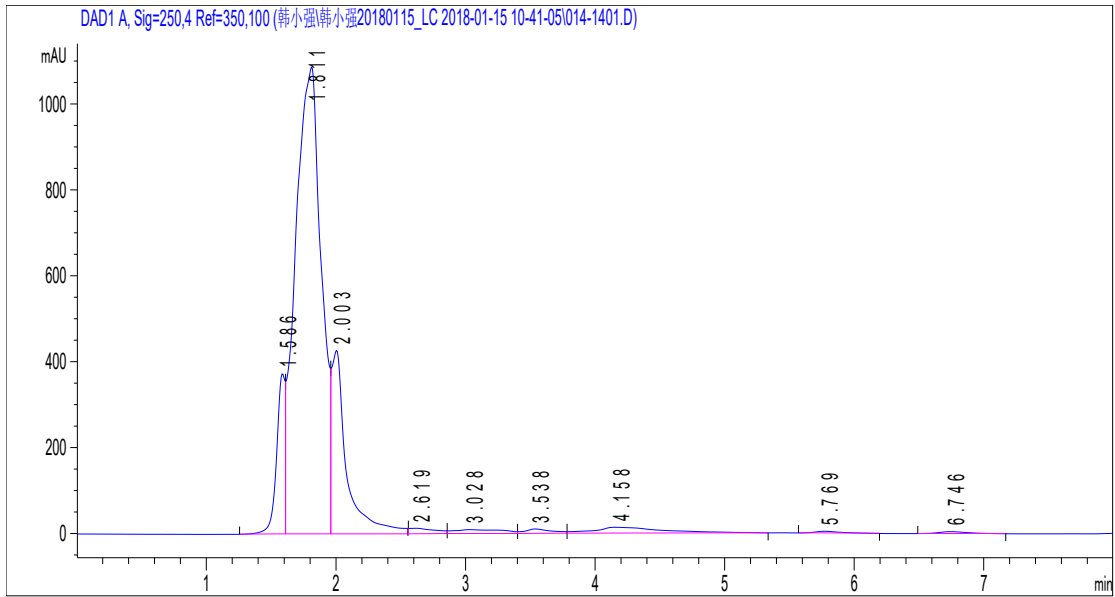


Figure S107 Sample of Cotton leaves (8d after spraying, 17.6L/ha- Middle layer, Shihezi, E86.058, N44.945)

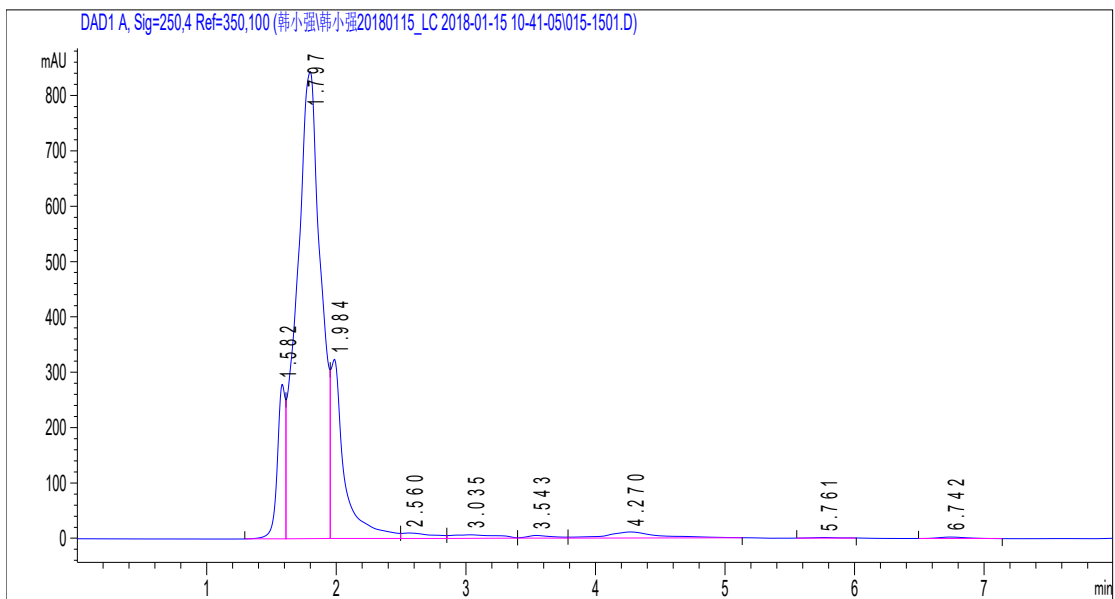


Figure S108 Sample of Cotton leaves (8d after spraying, 17.6L/ha- Lower layer, Shihezi, E86.058, N44.945)

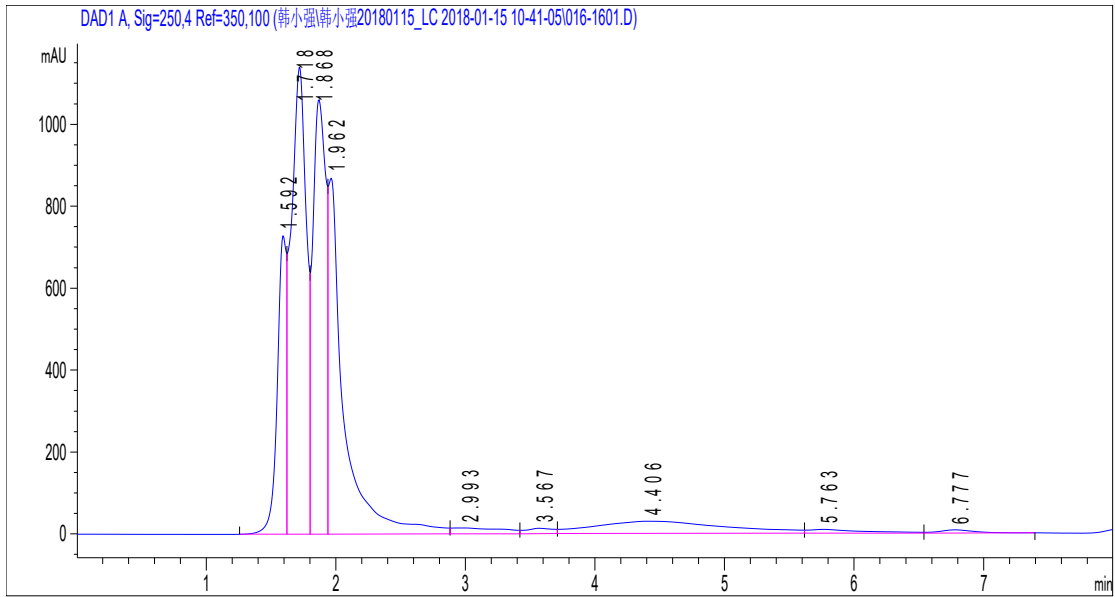


Figure S109 Sample of Cotton leaves (8d after spraying, 24.2L/ha- Upper layer, Shihezi, E86.058, N44.945)

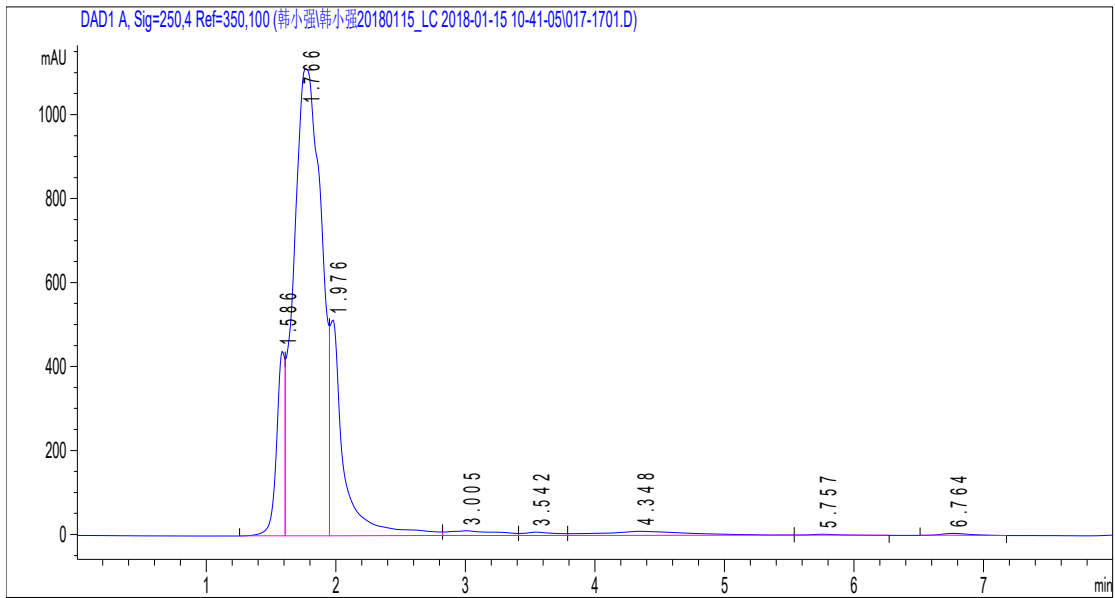


Figure S110 Sample of Cotton leaves (8d after spraying, 24.2L/ha- Middle layer, Shihezi, E86.058, N44.945)



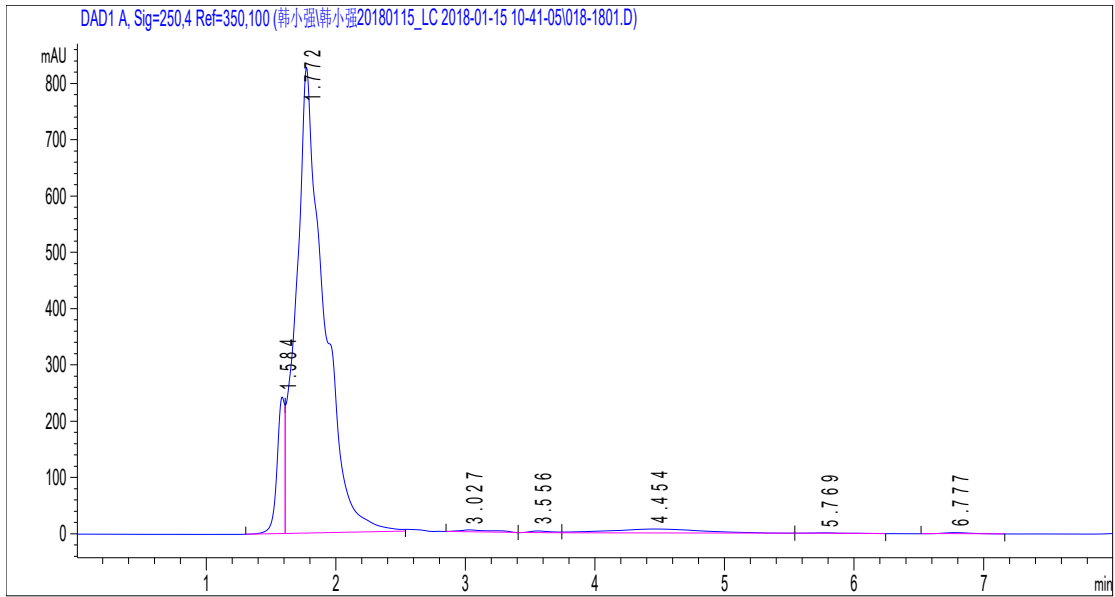


Figure S111 Sample of Cotton leaves (8d after spraying, 24.2L/ha- Lower layer, Shihezi, E86.058, N44.945)

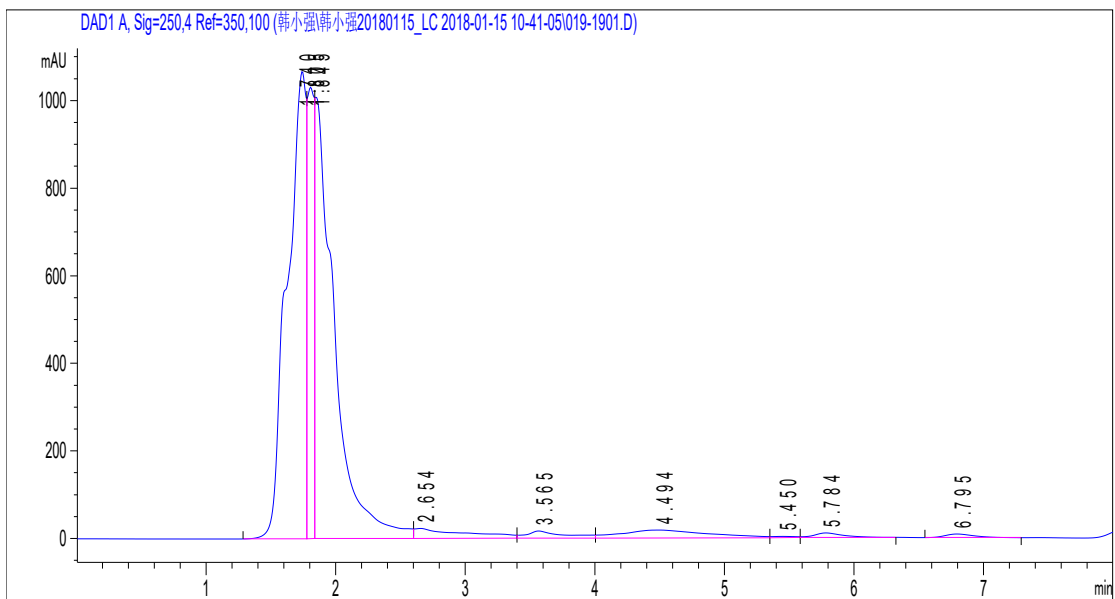


Figure S112 Sample of Cotton leaves (8d after spraying, 29.0L/ha- Upper layer, Shihezi, E86.058, N44.945)

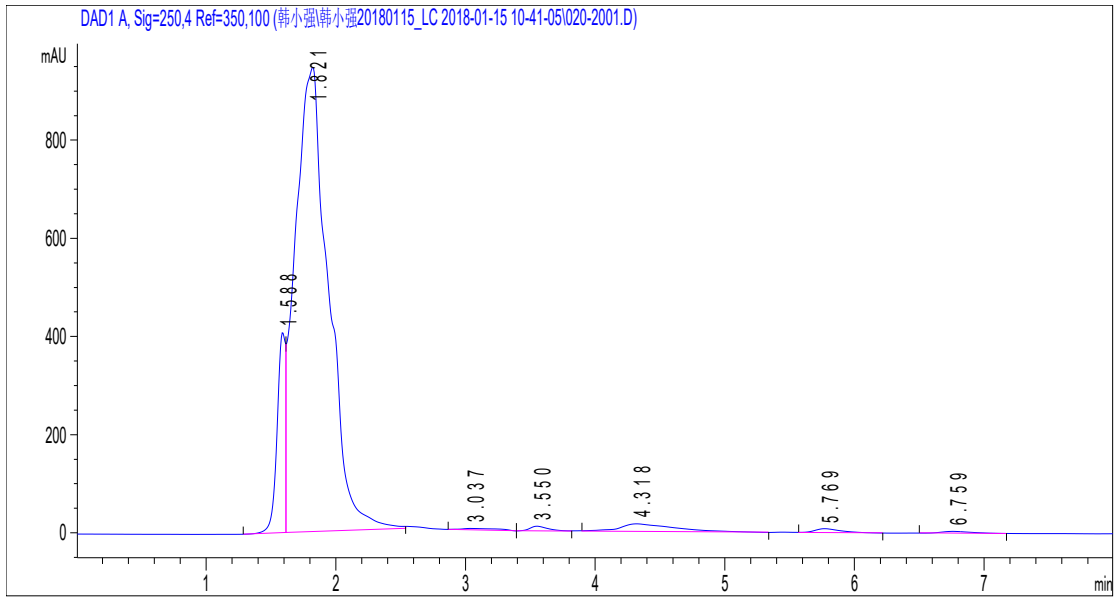


Figure S113 Sample of Cotton leaves (8d after spraying, 29.0L/ha- Middle layer, Shihezi, E86.058, N44.945)

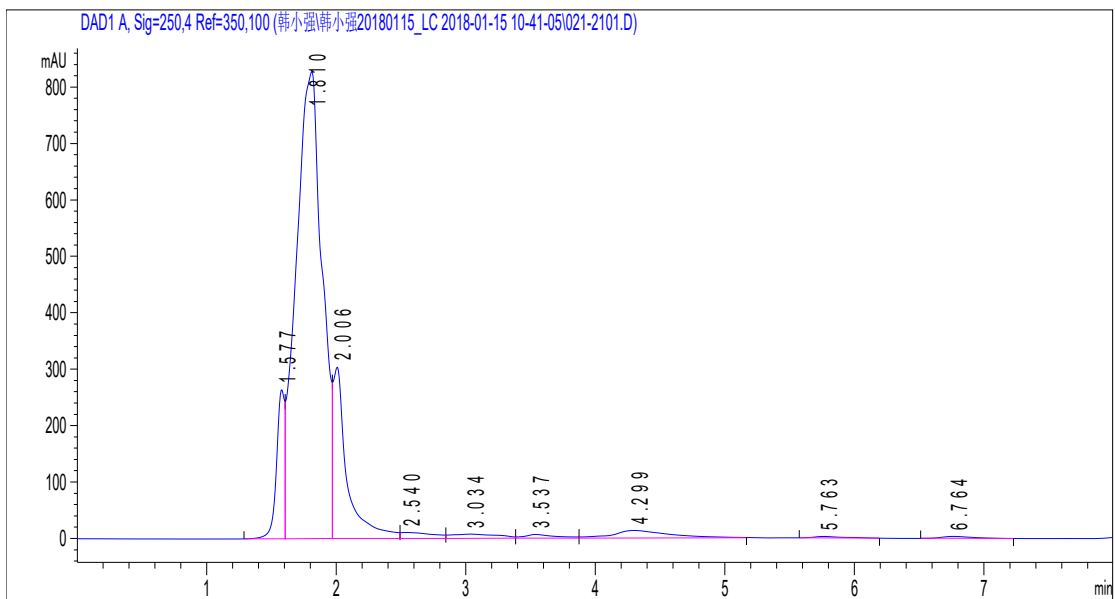


Figure S114 Sample of Cotton leaves (8d after spraying, 29.0L/ha- Lower layer, Shihezi, E86.058, N44.945)

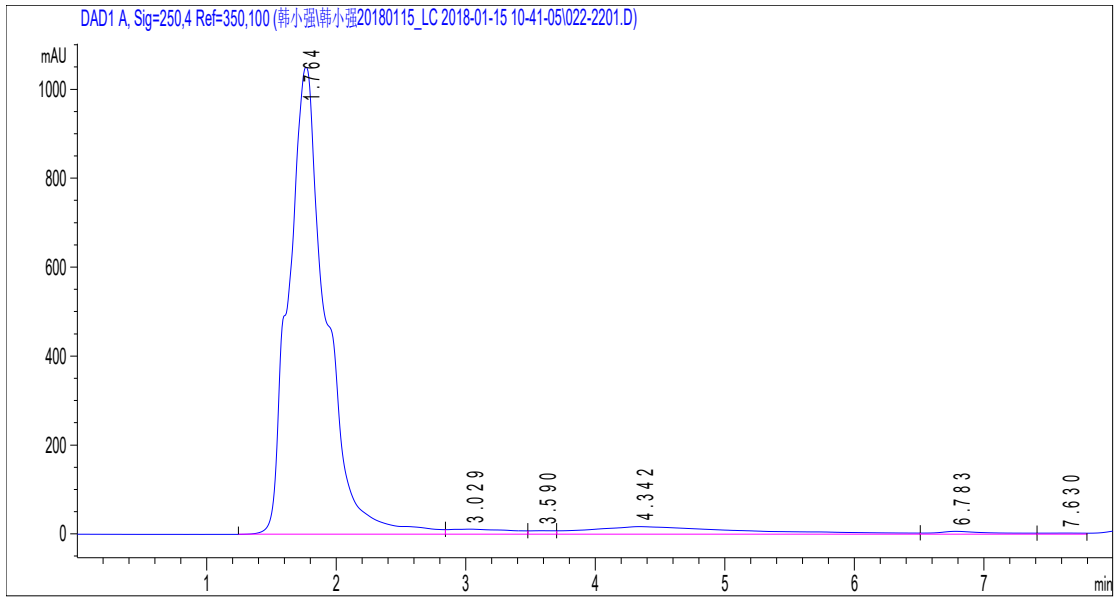


Figure S115 Sample of Cotton leaves (15d after spraying, 9.3L/ha- Middle layer, Shihezi, E86.058, N44.945)

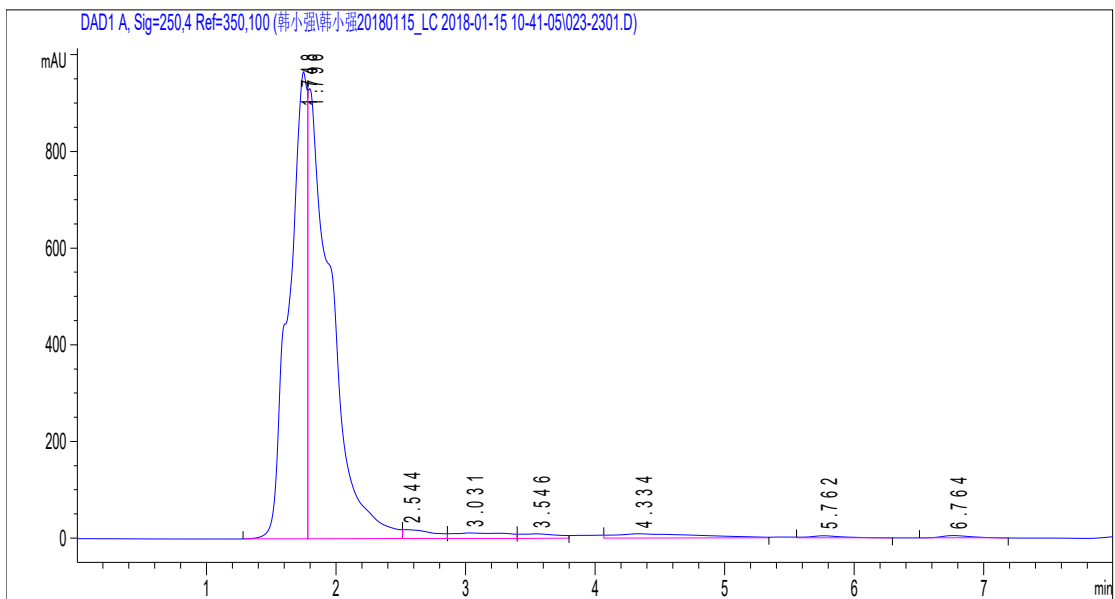


Figure S116 Sample of Cotton leaves (15d after spraying, 9.3L/ha- Lower layer, Shihezi, E86.058, N44.945)

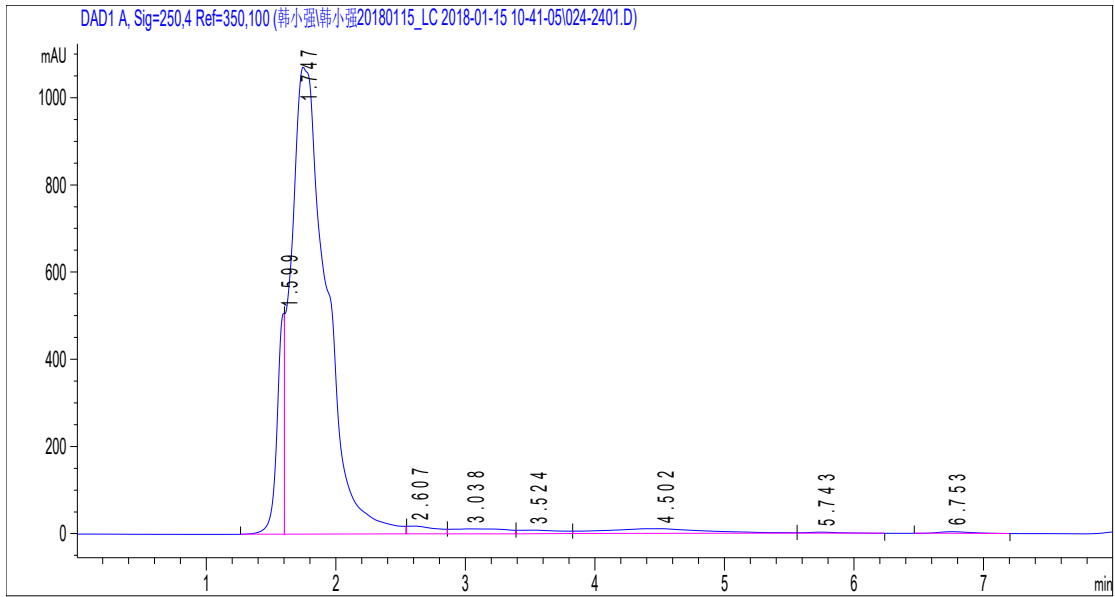


Figure S117 Sample of Cotton leaves (15d after spraying, 17.6L/ha- Middle layer, Shihezi, E86.058, N44.945)

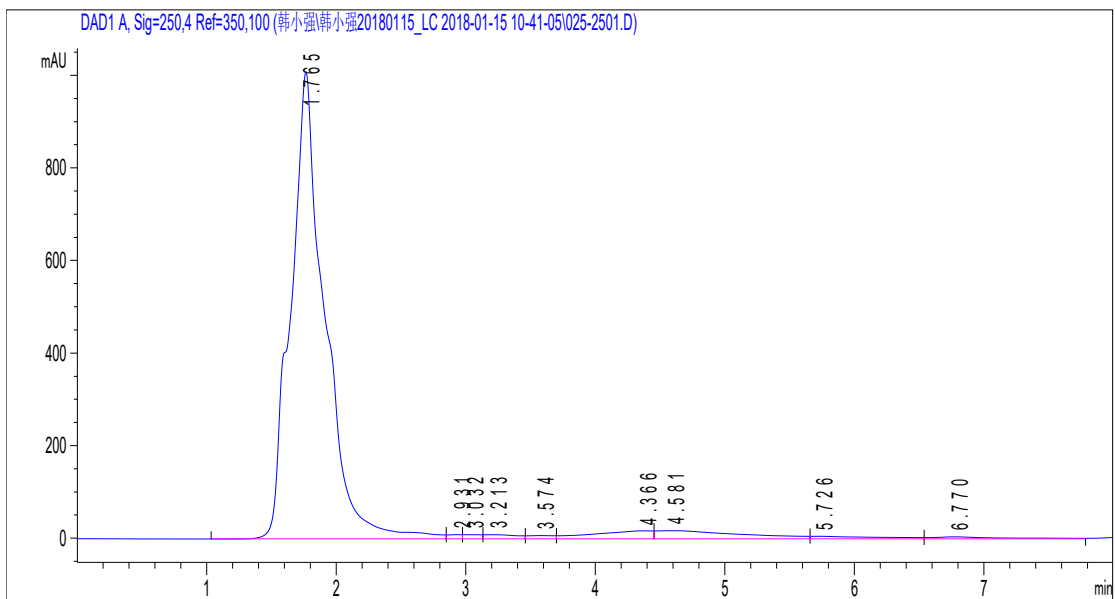


Figure S118 Sample of Cotton leaves (15d after spraying, 17.6L/ha- Lower layer, Shihezi, E86.058, N44.945)

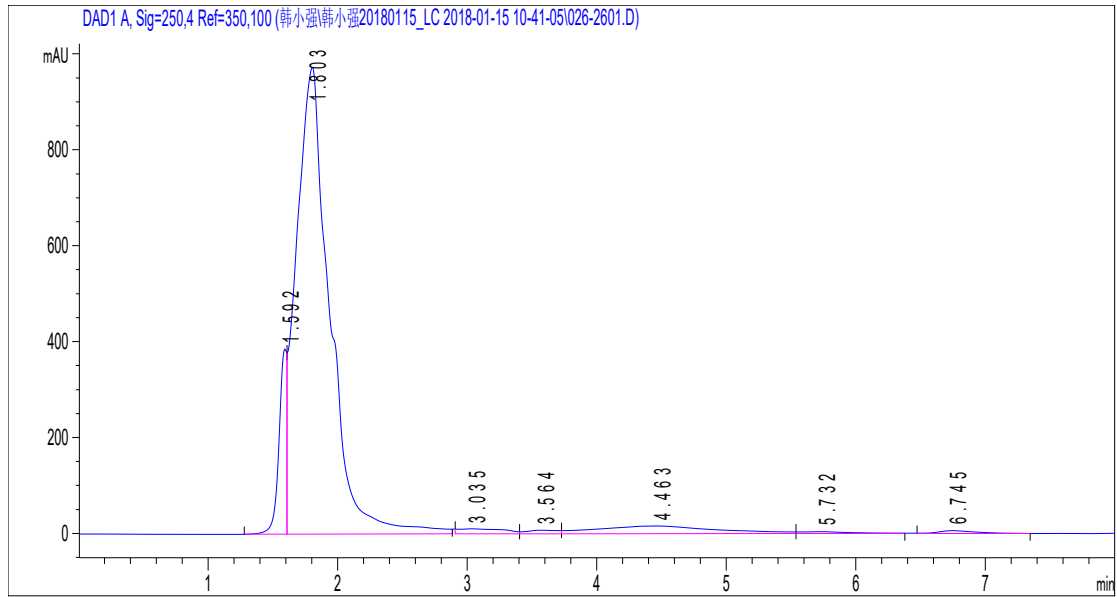


Figure S119 Sample of Cotton leaves (15d after spraying, 24.2L/ha- Middle layer, Shihezi, E86.058, N44.945)

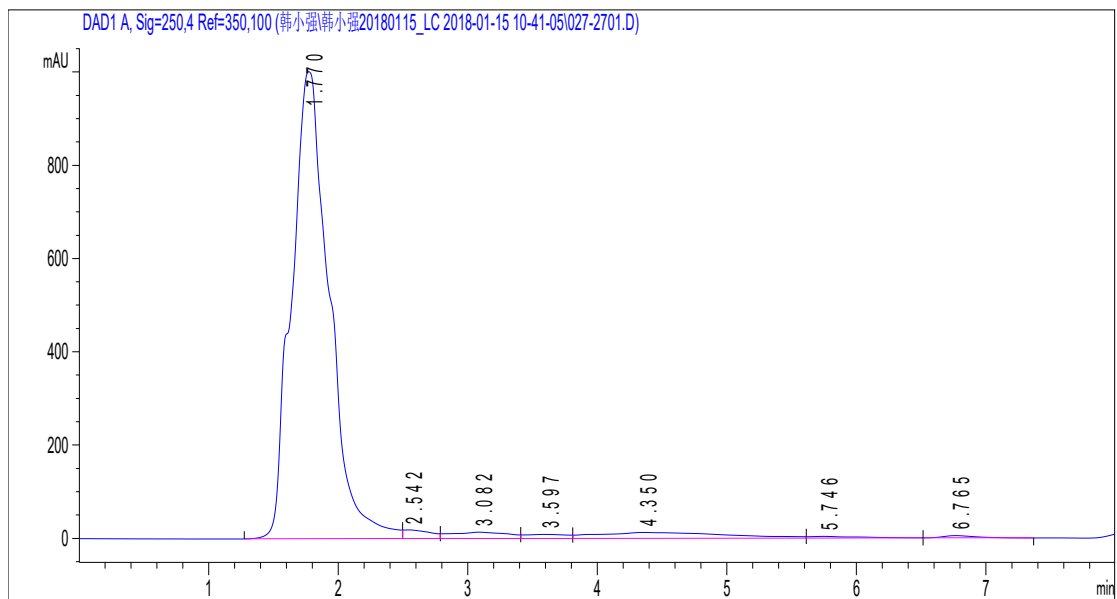


Figure S120 Sample of Cotton leaves (15d after spraying, 24.2L/ha- Lower layer, Shihezi, E86.058, N44.945)

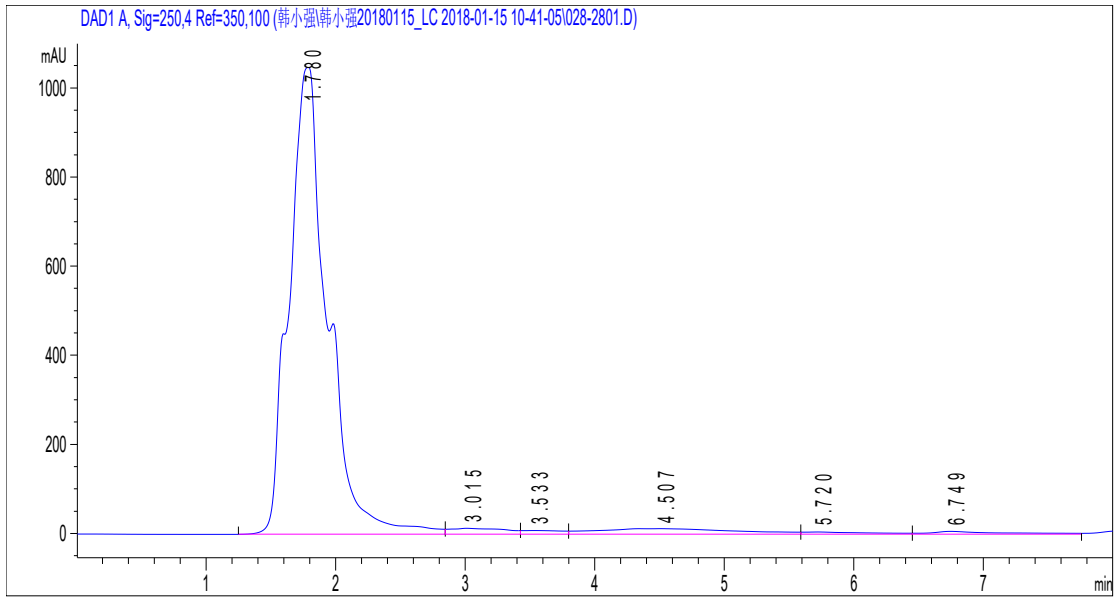


Figure S121 Sample of Cotton leaves (15d after spraying, 29.0L/ha- Middle layer, Shihezi, E86.058, N44.945)

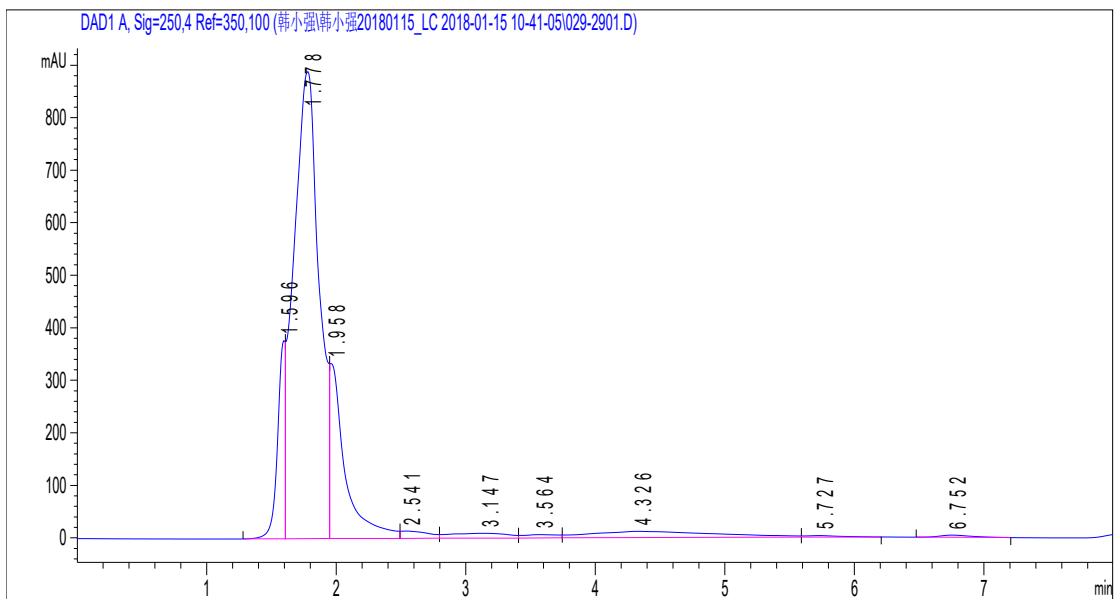


Figure S122 Sample of Cotton leaves (15d after spraying, 29.0L/ha- Lower layer, Shihezi, E86.058, N44.945)