Table 2. Range of observed aflatoxin contamination in maize samples compared to the aflatoxin risk index, sowing date, plant density and irrigation in seven locations in Queensland (QLD) and New South Wales (NSW) in 2005.

			Date of	Plants/	Samples		Aflatoxin	
Location	State	Irrigated	sowing	m2	Total	Positive	B1 (µg/kg)	Risk Index
Darlington Point	NSW	Yes	16-10-04	6	3	1	0 - 5	0
Narromine	NSW	Yes	24-12-04	10	10	4	0 - 80	9.2
Kumbia	QLD	No	2-01-05	2.5	9	5	0 - 3	0.5
Kingaroy	QLD	No	15-12-04	2.5	36	7	0 - 7	0.2
Wooroolin	QLD	No	15-12-04	2.5	18	10	0 - 20	4.5
Gayndah	QLD	No	3-01-05	2.5	10	9	0 - 53	21.9
Kairi	QLD	No	5-01-05	2.5	2	0	0	0.4

Legends to figures

Figure 1. Relationship between measured aflatoxin B1 and the simulated aflatoxin risk index (%) for several rainfed and irrigated locations in Qld and NSW in several seasons.
The regressions were significant at 1% probability level

Figure 2. Long-term probability of exceeding a given aflatoxin risk index (%) at different sowing times at Kairi, Emerald, Gayndah and Kingaroy in Queensland

Figure 3. Long-term average rainfall and ambient temperature during the reproductive stage (RS) and stress index during the last 60 days of crop growth at four locations in Queensland.
The stress index represents water supply and its demand, which is matched when its value is 1.
A lower value denotes a greater demand than supply, indicating crop water stress

Figure 4. Long-term probability of exceeding a given aflatoxin risk index in simulated sowings at Gayndah in early (October) and late (January) of quick and slow maturing maize hybrids

Figure 5: Long-term probability of exceeding a given aflatoxin risk index (top chart) and grain yield (lower chart) in simulated sowings at Gayndah on 15-October under high and low plant density.

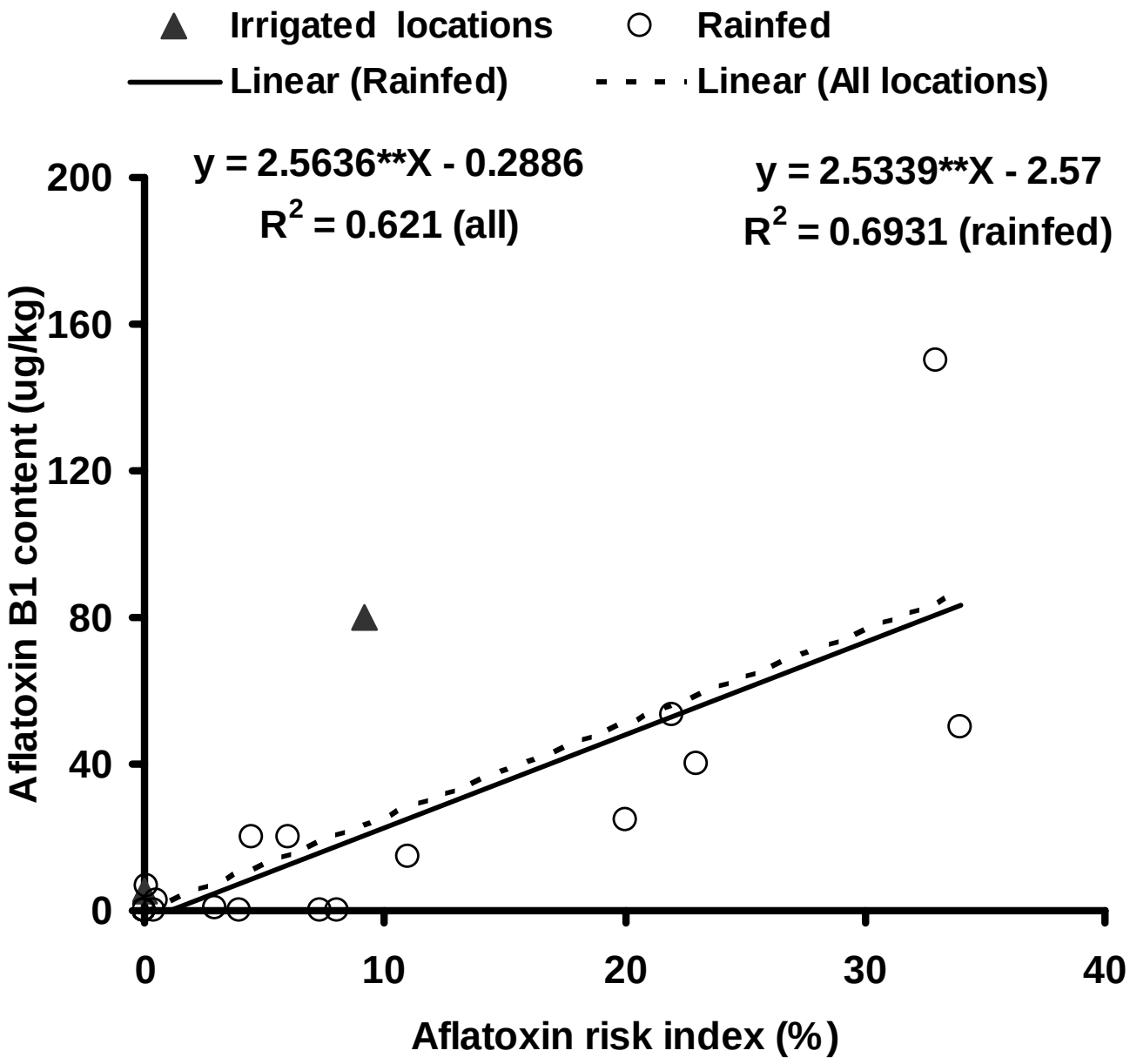
Irrigated locations
Rainfed
Linear (Rainfed)
Linear (All locations)
y = 2.5636**X - 0.2886
R2 = 0.621 (all)
y = 2.5339**X - 2.57
R2 = 0.6931 (rainfed)
Aflatoxin B1 content (ug/kg)
200
160
120
80
40
0
0
10
20
30
40
Aflatoxin risk index (%)

Fig. 1

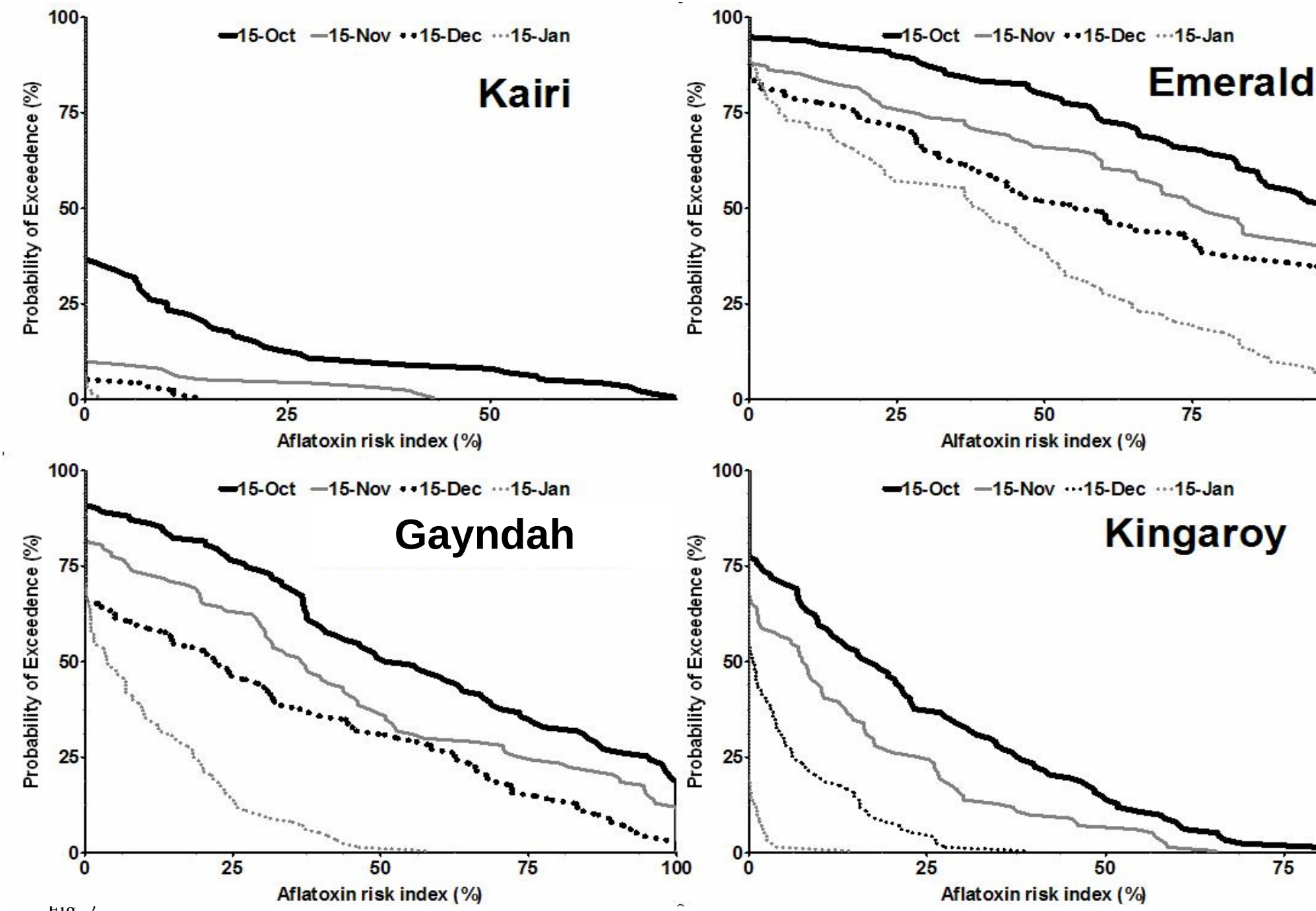
Kairi
Emerald
Gayndah
Kingaroy
15-Oct
15-Nov
15-Dec
15-Jan
Probability of Exceedence (%)
Aflatoxin risk index (%)
Alfatoxin risk index (%)
0
25
50
75
100

Fig. 2

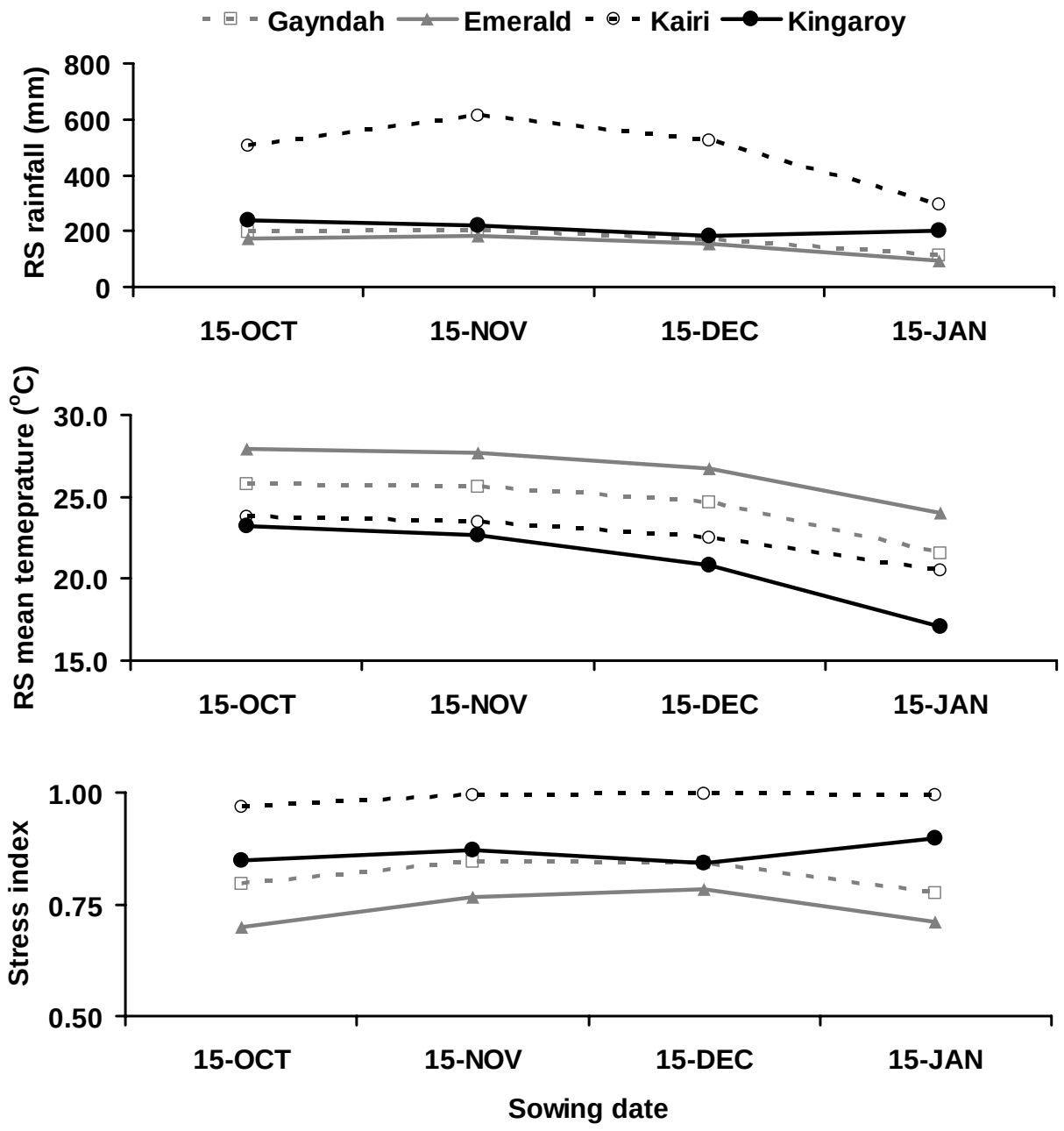
Gayndah
Emerald
Kairi
Kingaroy
RS rainfall (mm)
800
600
400
200
0
15-OCT
15-NOV
15-DEC
15-JAN
RS mean temeprature (°C)
30.0
25.0
20.0
15.0
15-OCT
15-NOV
15-DEC
15-JAN
Stress index
1.00
0.75
0.50
15-OCT
15-NOV
15-DEC
15-JAN
Sowing date

Fig. 3

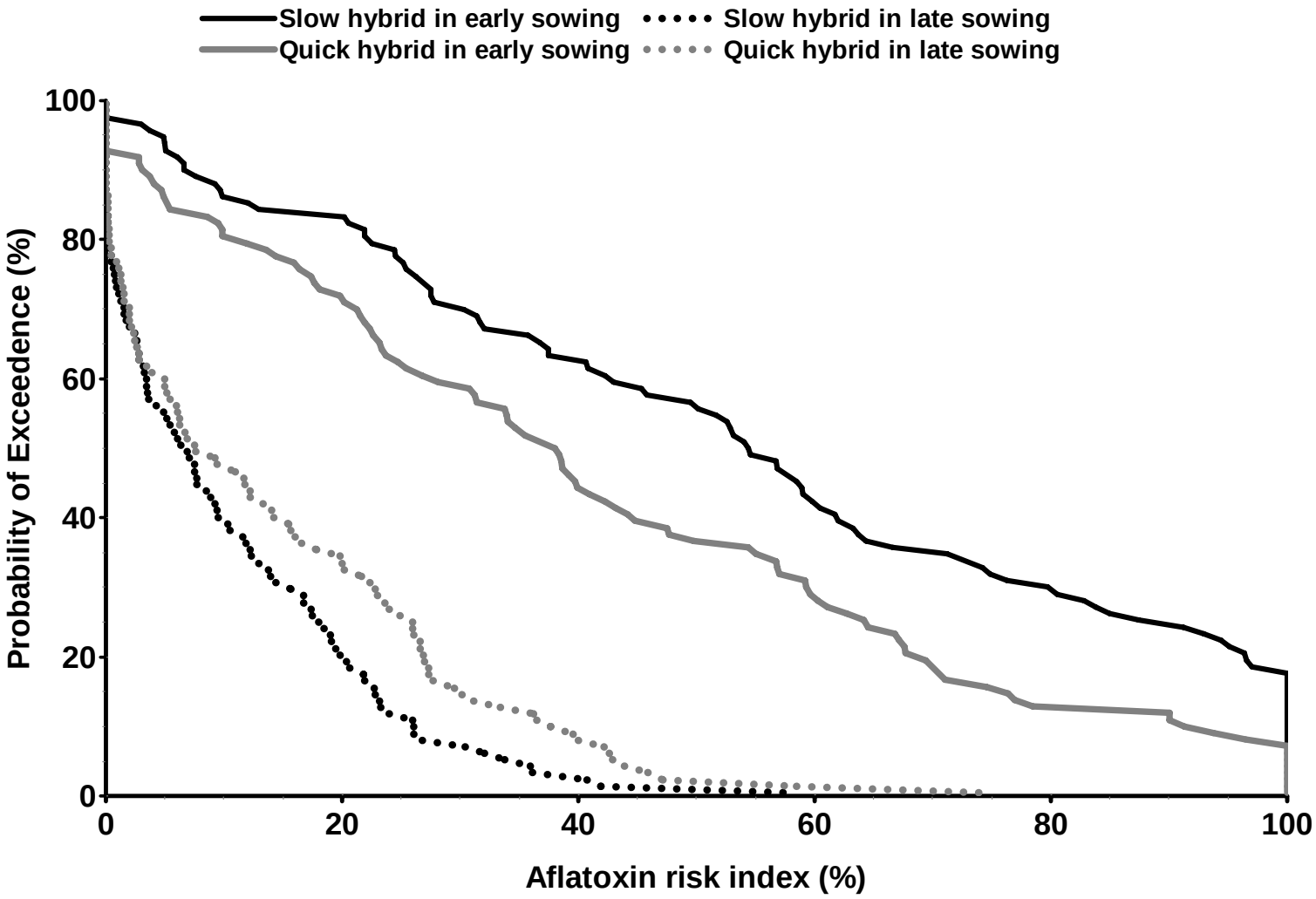
Slow hybrid in early sowing
Slow hybrid in late sowing
Quick hybrid in early sowing
Quick hybrid in late sowing
Probability of Exceedence (%)
100
80
60
40
20
0
0
20
40
60
80
100
Aflatoxin risk index (%)

Fig. 4

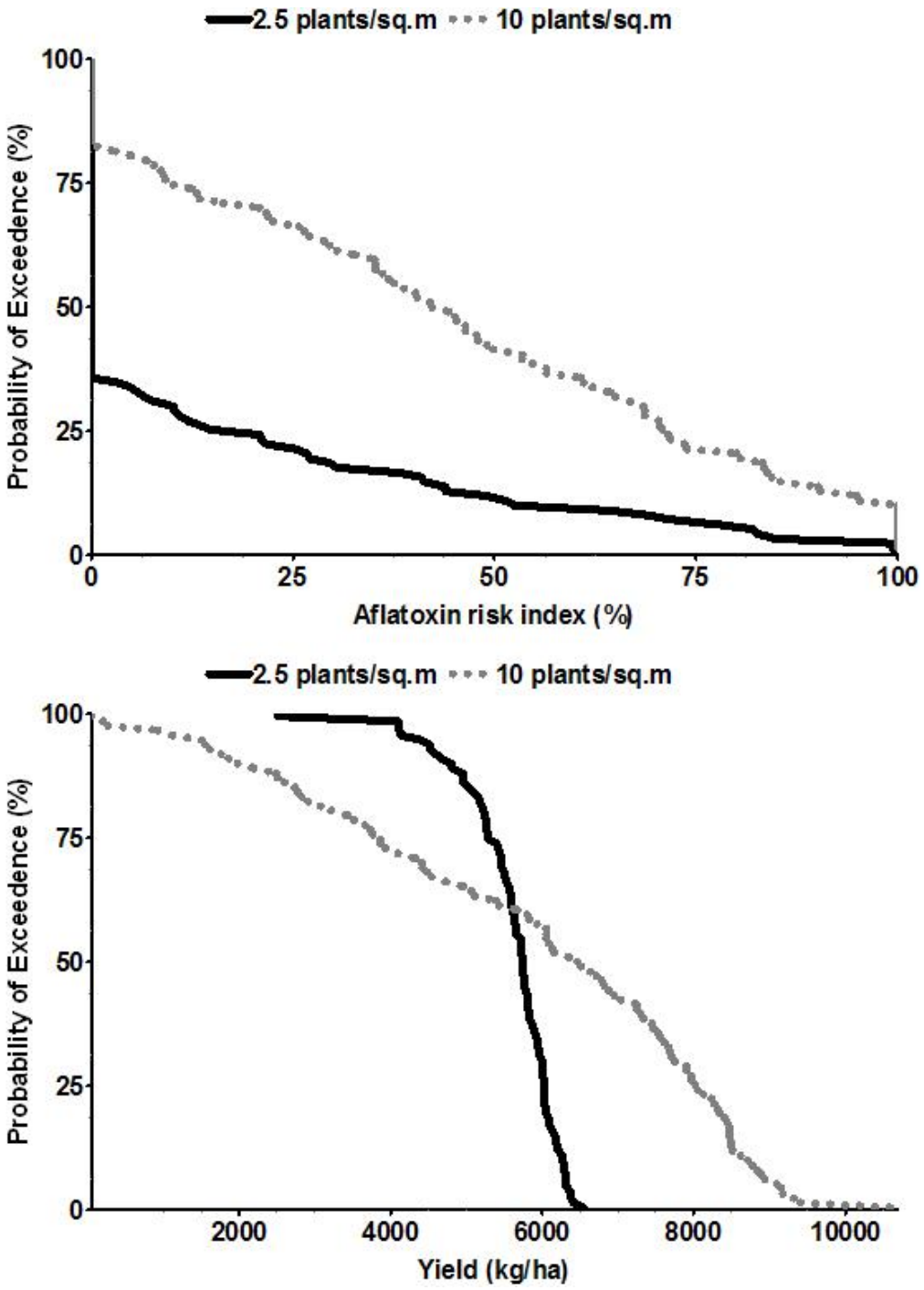
2.5 plants/sq.m
10 plants/sq.m
Probability of Exceedence (%)
100
75
50
25
0
0
25
50
75
100
Aflatoxin risk index (%)
2.5 plants/sq.m
10 plants/sq.m
Probability of Exceedence (%)
100
75
50
25
0
2000
4000
6000
8000
10000
Yield (kg/ha)

Fig. 5