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INERA

Identification of Sources of Resistance to *Alectra vogelii* in Cowpea (*Vigna unguiculata* L. Walp.) Germplasm in Burkina Faso

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Legume Innovation Lab

Feed the Future Innovation Lab for Collaborative Research on Grain Legumes

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Introduction

- Cowpea is produced in the **arid** and **semi arid** zones
- West Africa ➡ **84%** of world's production
- Burkina Faso = third cowpea producer in WA
- cowpea = important grain legume

Introduction (cont.)

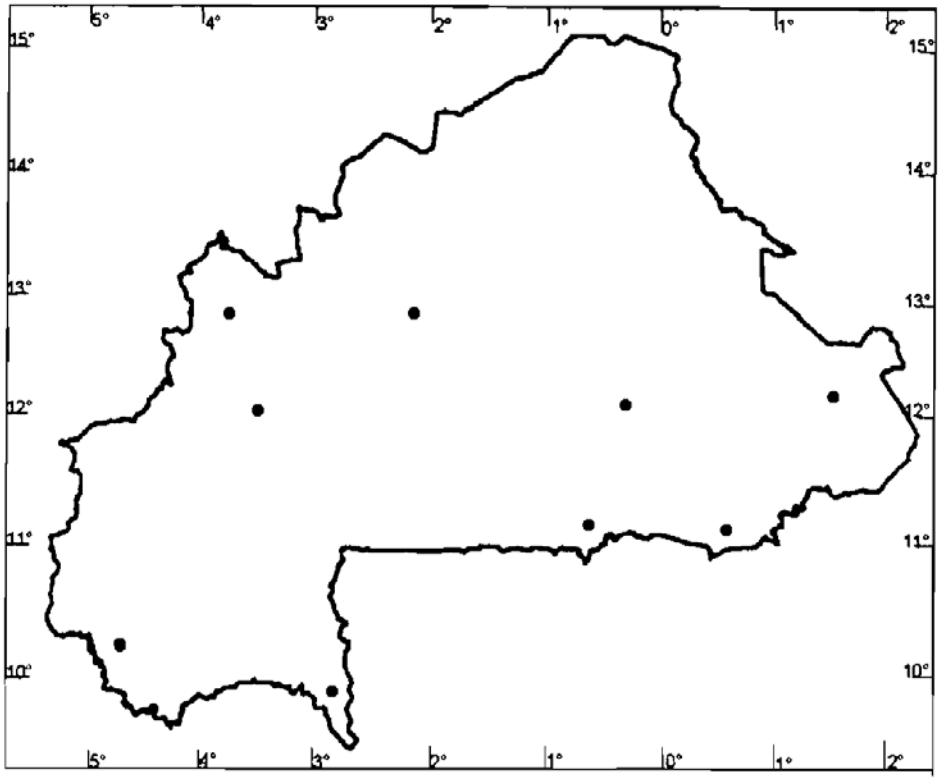
- Abiotic

biotic

Introduction (cont.)

- *Alectra* in Burkina Faso

Mbwaga *et al*., 2011



Boussim, 2002

Very few words have been done on Cowpea resistance to *A. vogelii* in Burkina Faso

Research objective

- General objective: contribute at improving cowpea yield in Burkina Faso

- Specific objective: identify source (s) of resistance to *A. vogelii* in cowpea germplasm of Burkina Faso

Material and methods

- 120 Genotypes screened
- 1L pots were infested with 5 months *Alectra* seeds (Magani *et al*., 2008).
- Two cowpea seeds sown/pot and thinned to one
- Trial daily watered

Material and methods

- Flowering, Mat., seed weight
- *Alectra* emergence (DAEM)
- *Alectra* severity evaluated on a scale of 5 classes (1-5)
- Data analyzed with SAS 9.4

Results

Genotypes	Flow	DAEM	Mat	Swgt	Swt100	Bio_Al	VgA50	VgA60	VgA70	VgA80
Komcalle	41.01		64.42	6.79	18.82	0	1	1	1	1
IT99K-573-2-1	44.75		63.1	7.12	19.17	0	1	1	1	1
IT98K-205-8	40.38		64.42	5.98	18.39	0	1	1	1	1
B301	51.91		63.21	3.83	17.62	0	1	1	1	1
IT86D10-10	38.52		63.83	5.15	18.68	0	1	1	1	1
IT93K-693-2	45.06		64.42	6.55	18.42	0	1	1	1	1
KVX 165-14-1	45.86		63.44	5.29	18.39	0	1	1	1	1
KVX414-22-2	47.24		64.42	6.26	18.62	0	1	1	1	1
N 2300	45.86		63.44	5.59	18.86	0	1	1	1	1
NS Farakoba	42.56		62.9	5.05	17.97	0	1	1	1	1
NS1	61.57		65.49	5.59	18.86	0	1	1	1	1
Mean	47.04**	50.56**	63.51**	5.59**	17.92**	4.29**	1.58**	2.17**	2.44**	2.68**

Results

Genotypes	Flow	DAEM	Mat	Sdwgt	Swt100	Bio_Al	VgA50	VgA60	VgA70	VgA80
BC3F3-48P90	39.91	50.18	62.22	6.13	20.14	3.97	1.47	2.73	3.31	3.65
IT82E-32	55.8	49.47	63.51	5.59	17.92	4.24	1.78	2.73	3.07	3.89
58-57	47.04	49.27	63.51	5.59	17.92	6.96	1.62	2.5	3.31	3.89
BC3F3-92 P27	46.06	48.76	65.07	5	15.48	4.5	1.93	2.73	3.31	3.89
Pobe local	47.04	49.17	63.51	5.49	22.62	6.52	1.93	3.18	3.31	3.89
BC3F3-48P93	44.86	49.17	63.79	6.55	18.36	4.28	1.93	3.18	3.55	3.89
Vita-5	56.82	48.05	63.51	5.59	17.92	6.5	1.93	3.18	3.55	3.89
Dimbo local	47.04	49.47	63.51	5.59	17.92	6.28	1.78	2.95	3.78	3.89
IT00K-901-6	55.6	49.78	63.51	6.34	19.17	7.17	1.78	2.95	3.07	4.13
Komsare	56.31	48.96	63.51	4.6	17.17	5.32	1.78	2.73	3.55	4.13
Sakoula local	52.58	48.25	66.24	3.99	14.8	5.2	1.93	2.95	3.55	4.13
Woango-1	55.86	48.15	63.51	5.59	17.92	7.24	2.08	3.63	3.78	4.13
KVX771-10x693-2GB	42.75	48.76	62.23	4.39	22.91	6.28	2.08	3.63	3.78	4.38
KVX61-1	43.43	48.96	63.62	4.57	16.54	7.59	2.24	3.18	4.02	4.38
Sanzi	57.17	48.35	63.47	4.35	15.96	6.48	2.08	3.63	4.02	4.38
Mean	47.04**	50.56**	63.51**	5.59**	17.92**	4.29**	1.58**	2.17**	2.44**	2.68**

Results

Flow	1	-									
DAEM	2	0.04	-								
Mat	3	0.41	0.18	-							
Swgt	4	–0.17	0.12	0.08	-						
Swt100	5	–0.19	0.06	–0.20	–0.02	-					
Bio_Al	6	0.21	**–0.47**	0.04	–0.22	–0.09	-				
VgA50	7	0.08	**–0.68**	–0.14	–0.17	–0.10	**0.54**	-			
VgA60	8	0.08	**–0.56**	–0.15	–0.13	0.05	**0.56**	**0.88**	-		
VgA70	9	0.13	**–0.44**	–0.11	–0.16	0.01	**0.60**	**0.81**	**0.93**	-	
VgA80	10	0.16	**–0.38**	–0.08	–0.14	0.02	**0.61**	**0.78**	**0.90**	**0.96**	-
		1	2	3	4	5	6	7	8	9	10

Conclusion

- New sources of resistance to *Alectra vogelii* identified
- Varieties: Komcalle, IT98K-205-8 and IT99K-573-2-1 can be recommended in infested areas
- The resistant lines identified are potential donor parents

Acknowledgements

INERA Cowpea breeding team

VS

Thank you