EVALUATION OF SORGHUM GENOTYPES TO ENHANCE PRODUCTION TO COPE WITH CLIMATE CHANGE IN MAKUENI COUNTY, KENYA

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Outline of Presentation

- Background
- Objective
- Materials and Methods
- Results and Discussion
- Conclusion
- Acknowledgements

BACKGROUND

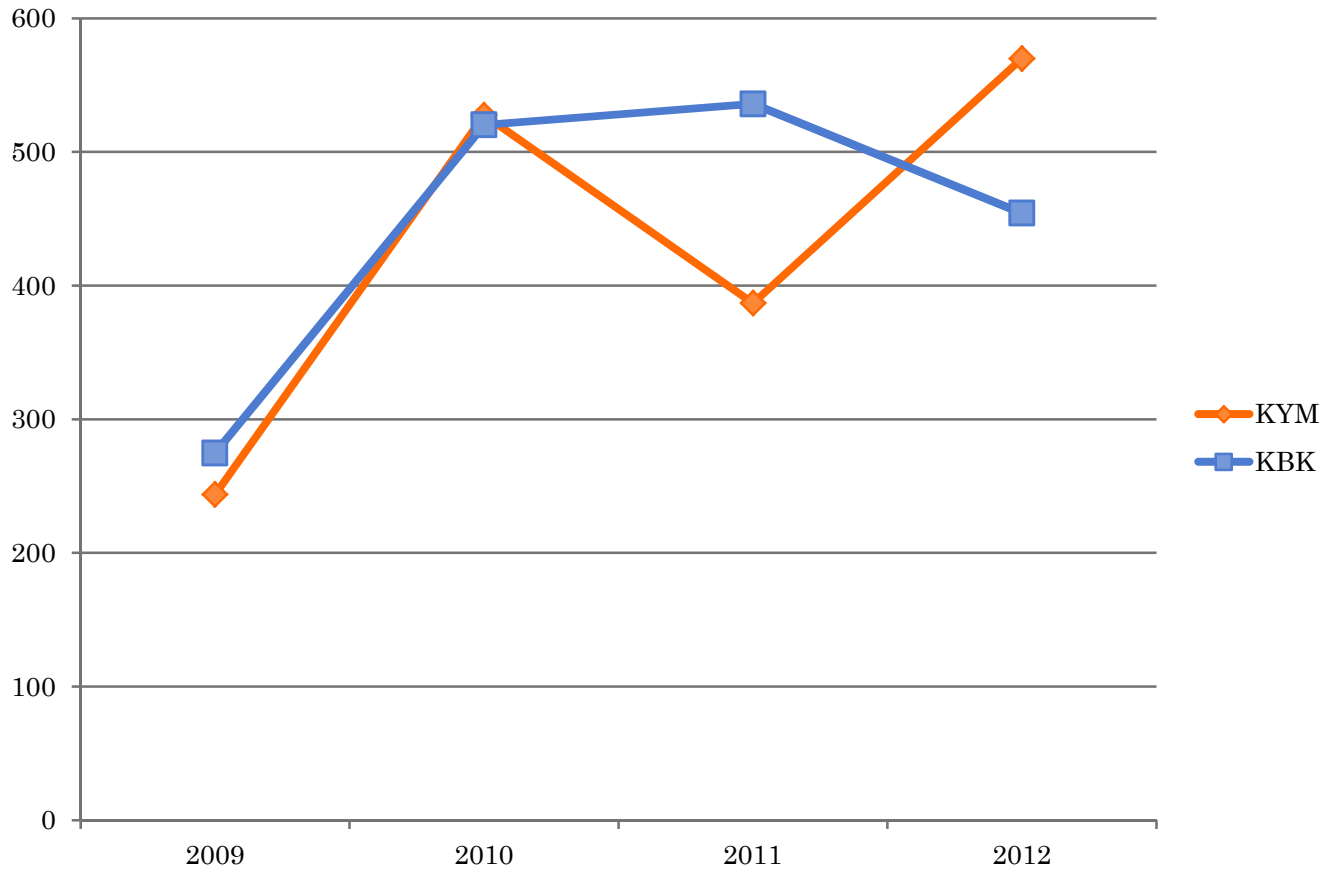
Sorghum

- Important cereal in Kenya
- Dual purpose- Grain Human food and livestock feed
- High energy
- Grown from 0-2500a.s.l, varied ecological zones
- Tolerance to drought stress- unlike maize, wheat
- Can endure short periods of water logging

BACKGROUND……

- Makueni- LM4, Climatic conditions- intermittent rainfall

Total Rainfall in Kiboko and Kampi ya Mawe



OBJECTIVE

This study set to evaluate fifteen genotypes of sorghum, that included local varieties and hybrids, for their agronomic performance under rainfed and irrigated conditions

MATERIALS

- 15 sorghum genotypes- Varieties and Hybrids
  1. Serena
  2. TXARG/K567A X Seredo
  3. P9531A X ICSR 92074
  4. Gadam
  5. P9535A X Chokwe
  6. P9537 X Chokwe
  7. Seredo
  8. TXARG/KS67A X NL 9623
  9. P9537A X FPR (168 X G570)
  10. ICSV 111
  11. P9508A X ICSR 91005
  12. P9537A X Kuyuma
  13. P9535A X Pirira 1
  14. KARI Mtama 1
  15. P9507A X KAT 1369 X Makueni Local

METHOD

- Planting short reliable rain season
- 75cm row to row by 20cm plant to plant.
- Fertilizer - 80kg of N P/ha before planting and 100 kg/ha CAN for top dressing.
- Thinning and weeding 2 weeks after emergence
- Data collected: Plant height at maturity, Panicle length, Panicle weight
- Data analysis: ANOVA & correlation

RESULTS AND DISCUSSIONS

ANALYSIS OF VARIANCE

Source	d.f.	Panicle length (cm)	Panicle weight (g)	Plant Height (cm)
Rep	2	5.38	711.2	348.48
Variety	14	97.37**	3523.9**	3564.57**
Site	1	318.441**	118955.6**	71982.03**
Sitex Variety	14	3.391	860.8	498.24**
Error	58	3.438	632.3	81.69
C.V.		6.7	22.9	6.4

Sorghum Genotypes











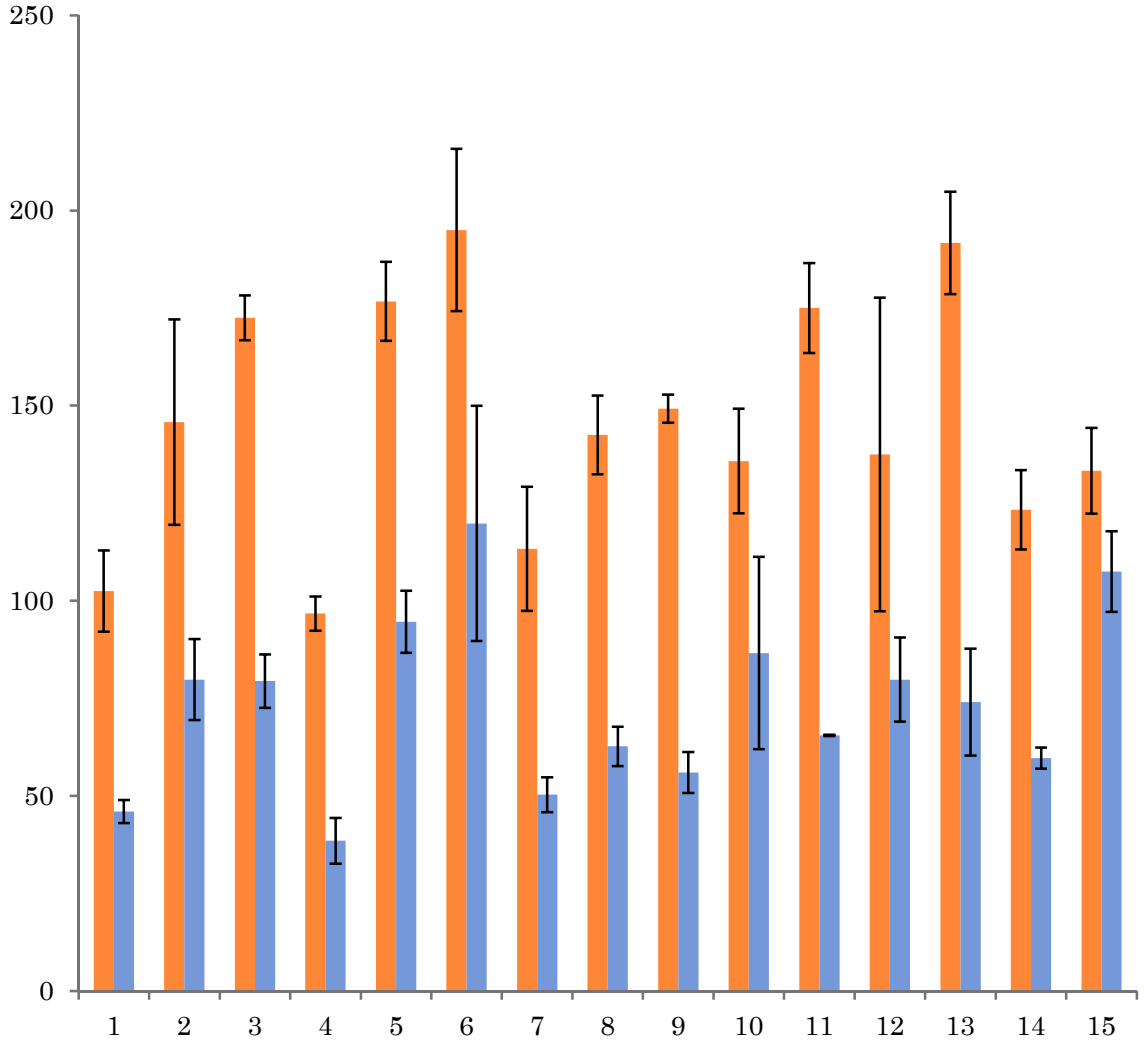




MEAN PANICLE LENGTH, PANICLE WEIGHT AND HEIGHT

Sorghum variety/ hybrid	Panicle length (cm)	Panicle weight (g)	Mean Height (cm)
P9537 X CHOKWE	33.38a	157.4a	147.7c
P9535A X CHOKWE	34.51a	135.6ab	145.2cd
P9535A X PIRIRA 1	29.86b	132.8ab	136.7de
P9531A X ICSR 92074	32.6a	125.9bc	144.2cd
P9507A X KAT 1369 X MAKUENI LOCAL	29.62bc	120.4bcd	179.2a
P9508A X ICSR 91005	27.54cde	120.2bcd	109.4hi
TXARG/K567A X SEREDO	29.49bcd	112.8bcd	172ab
ICSV 111	22.89gh	111.2bcd	175.6a
P9537A X KUYUMA	29.21bcd	108.7bcde	125.5fg
TXARG/KS67A X NL 9623	26.05ef	102.6cdef	117.2gh
P9537A X FPR (168 X G570)	27.39de	102.6cdef	163.7b
KARI Mtama 1	22.41h	91.5defg	138.9cde
SEREDO	25.56ef	81.8efg	131.2ef
SERENA	24.99fg	74.3fg	119.3gh
Gadam	21.01h	67.6g	99.5i
Mean	27.77	109.7	140.36
lsd	3.03	41.1	14.77

Panicle Weight analysis of sorghum varieties in the two sites



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Field day

- Farmers
- Merchants
- MoA
- Administration

- Farmers accepted the hybrids were better performing
- The aspects selected were: colour, heavy grains and feed for livestock
- The marketer indicated he had a thresher and encouraged farmers to use the facility to avoid infection from aflatoxin and other bacteria
- The brewing industry has ready market for the Gadam variety and had supplied seed

CHALLENGES

- Lack of markets
- Middle men- buying at low prices
- Birds & Labour esp. for bird scaring
- Maize is still preferred over Sorghum

WAY FORWARD

- Increase the awareness of the market, and have more utilization of sorghum
- Farmer field groups to facilitate marketing of produce and sign contracts with marketers
- Identify sorghum large scale farmers and empower them
- Engage labour and other methods for bird scaring
- Increase sorghum acreage, spread bird infestation

CONCLUSION

- Farmers are willing to increase production of the sorghum
- Increase sorghum acreage in the area, through more public awareness, technica support in the whole value chain
- Identify and Disseminate more utilization options for the sorghum in this area

ACKNOWLEDGEMENTS

KAPAP for funding the project

THANK YOU

1. Gadam,
2. icsv III,
3. KARI Mtama 1,
4. P9508A X ICSR 91005_ppt,
5. P9535A X CHOKWE_ppt,
6. P9535A X PIRIRA 1_ppt,
7. P9537 X CHOKWE_ppt,
8. P9537A X KUYUMA_ppt,
9. P5090180_ppt,
10. P5090182_ppt,
11. P5090192_ppt,
12. P5090194_ppt,
13. P5090206_ppt,
14. P5090208_ppt,
15. Seredo_ppt,
16. Serena_ppt

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