ABSTRACT: 167

PRELIMINARY RESULTS ON THE SELECTION OF SUITABLE SOYBEAN (*GLYCINE MAX* (L) MERR.) CULTIVARS FOR PRODUCTION IN THE MQANDULI AREA OF THE EASTERN CAPE PROVINCE, SOUTH AFRICA

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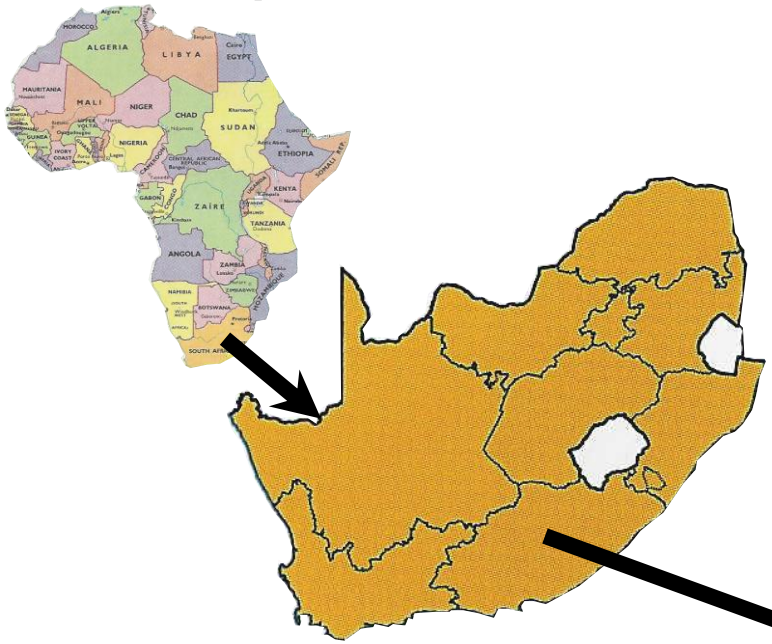
Correct cultivar selection is critical in soybean production because cultivar performance varies depending on its response to climatic and soil conditions. Moreover, soybean cultivars may differ in agronomic qualities such as lodging, seed yield, length of growing season and disease resistance. New soybean cultivars are developed regularly to address agronomy challenges and are subsequently introduced into the market. Performance of new cultivars may not have been tested in localities before their release to the market. Field experiments is the main tool used to provide reliable information on cultivar performance. A field experiment laid out in a complete randomized block design was conducted in the Eastern Cape Province (at Mqanduli) in the 2008/09 growing season to evaluate performance of nine soybean cultivars namely PAN 626 , PAN1664R, PAN660, A5404RG, PAN1454R, PAN535R, LS6150R, LS678 and LS 6164. Results obtained showed that cultivars differ in their performance even though they were grown in identical conditions. Findings revealed a significant difference in seed yield at $p \leq 0.05$ between PAN 660 and LS 6164R. Pan 660 was recorded to produce the highest yield at 3t/ha, whilst cultivar LS 6164R produced the least at 1.7t/ha.

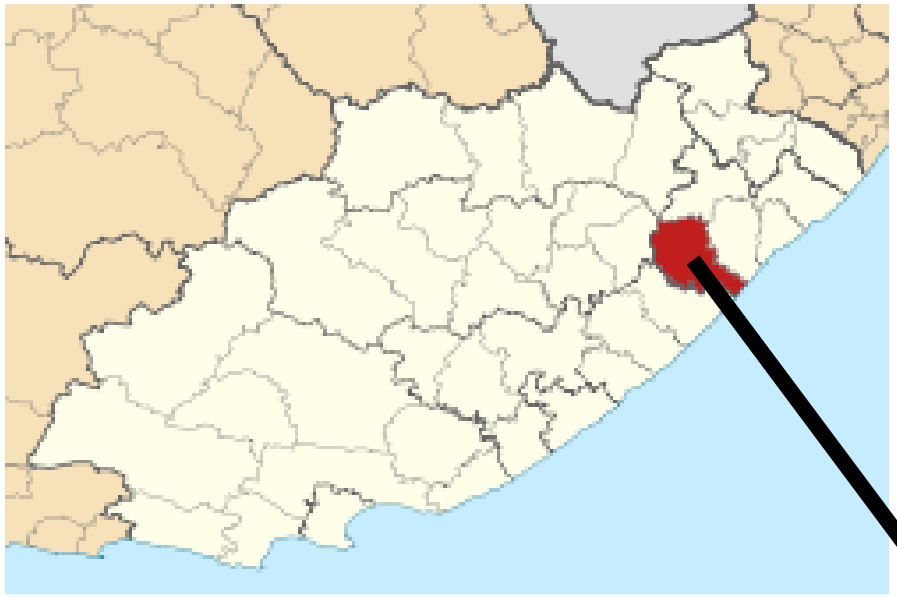
Preliminary results on the selection of suitable soybean (*Glycine max* (L) *Merr*.) cultivars for production in the Mqanduli area of the Eastern Cape Province, South Africa

Province of the
EASTERN CAPE
RURAL DEVELOPMENT AND AGRARIAN REFORM

BACKGROUND

- The study was conducted in SA in the Eastern Cape Province – Mqanduli locality



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BACKGROUND (cont.)

- In the Eastern Cape (esp former homelands) = large percentage of agric land is owned by resource poor, small scale farmers
- Currently produce mainly maize
- Market flooding with this one crop commodity
- Obvious alternative = introduction of other crops
- Hence this study was conducted to evaluate performance of soybean as a new crop in that area

INTRODUCTION

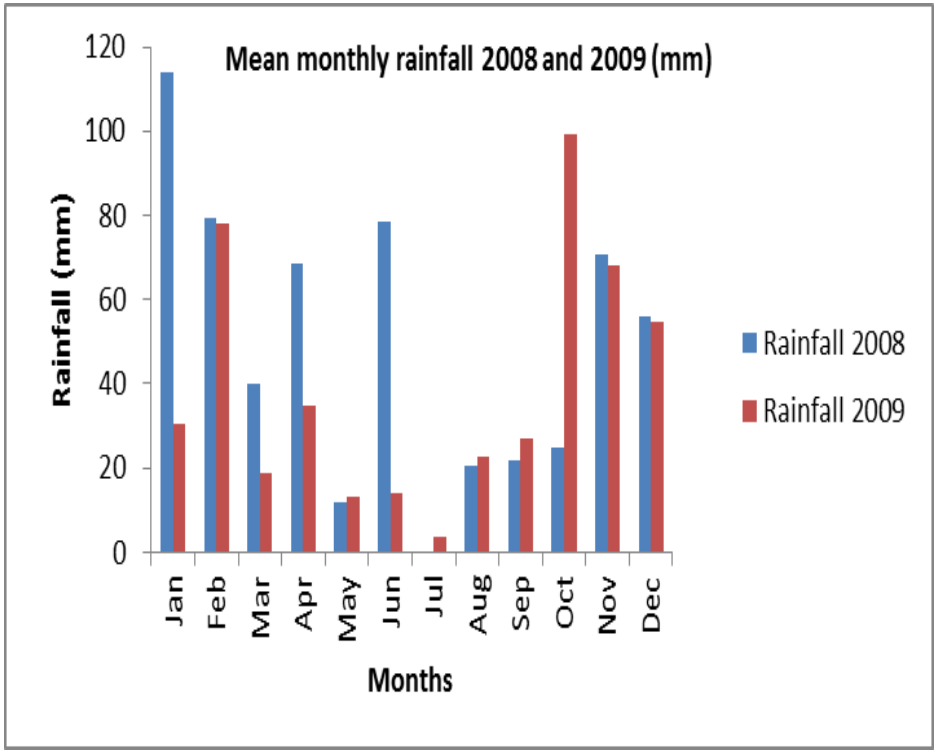
- Soybean (*Glycine max* (L) *Merr.*) - legume
- Legume - Nitrogen fixation - Reduce N fertilizer requirement for follow up cereal crops
- Excellent plant protein - substitute
- Industrial uses – biodiesel (SA bio-fuel strategy, 2007) benefit socio-economic status, etc

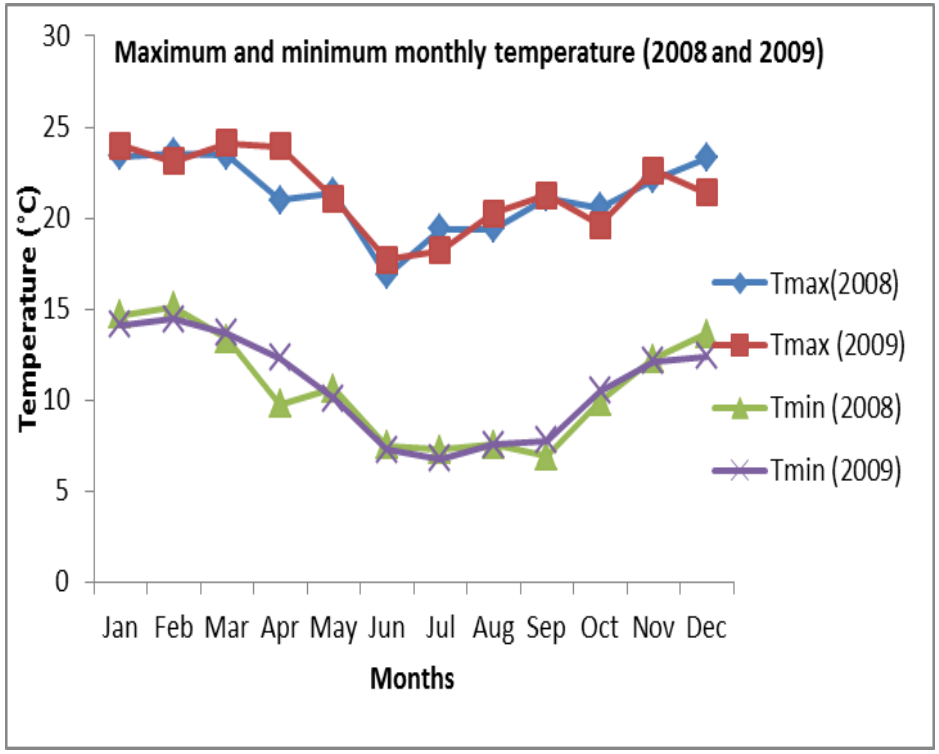
MATERIALS & METHODS

- Land prep done conventional method of ploughing and discing
- Fertilizer application (KCL,NPK 2:3:2) done as per soil test results
- Seed innocculated with *Bradyrhizobium japonicum* at planting
- Trial lay out RCBD with 3 replicates consisting of 9 cultivars: PAN 626, PAN 1664R, PAN 660, A5409RG, PAN 1454R, PAN 535R, LS6150R, LS678 & LS6164R

MATERIALS & METHODS (cont).

CLIMATIC DATA





MATERIALS & METHODS (cont).

- Weed control – manual
- Insect pest control – chemical
- Parameters tested were date of flowering, pod height, date of physiological maturity and seed yield

MATERIALS & METHODS (cont).

- Harvesting was done when seed was at 12.5% moisture content
- Moist content measured using grain moisture tester
- Harvesting was done manually by hand
- Only seed yield results are reported here

RESULTS & DISCUSSION

Table 1. Seed yield of the nine soybean cultivars tested

CULTIVAR	YIELD (t/ha)
PAN 626	2.014 ab
PAN 1664R	1.839 ab
PAN 660	3.001 a
A5409RG	2.709 ab
PAN1454R	2.661 ab
PAN 535R	2.147 ab
LS 6150R	2.290 ab
LS 678	2.619 ab
LS 6164R	1.737 b
LSD Values	1.214
CV%	30.03

Yield figures showing the same letter i.e. a or b do not differ significantly at $p \leq 0.05$

CONCLUSION

- All nine cultivars tested have potential to be produced in that area
- Cultivars PAN 660 and LS 6164R best and least performers, respectively
- Yields - genetically determined – management and environmental effects (Pederson, 2004)

CONCLUSION & RECOMMEND.

- Minimum crop failure - adaptable cultivars such as PAN 660
- Data obtained from this study is preliminary
- Research for other parameters such as seed oil content is planned for future

THANK YOU!!