Sesame Field Report 16th-18th December 2016-Documentation of the Experimental trials

Introduction

In Uganda, about 250,000 smallholder farmers are engaged in sesame production. These produce about 101,000 Mt from an area of 176,000 ha, the biggest percentage of this production (95,000 Mt or 93.7%) is realized from northern Uganda (UBOS 2010). Sesame has small nutritious seeds, is a very important oil crop, and is valued for its high quality oils (44% to 52%).

However, despite its high value and potential, sesame has received less development attention (AfrII, 2012). Its Production is characterized by low yields and low productivity due to:

- The impact of frequent extreme weather events (droughts, unpredictable seasons, too much rainfall)
- Use of traditional varieties and management practices,
- Poor pests and diseases control practices,
- Declining soil fertility,
- Pre and post-harvest losses,

About the Sesame Project

The Sesame Project is being implemented in the Districts of Amolatar, Lira and Otuke in the Lango region. The overall objective is to stabilize and improve Sesame productivity in the Lango region, Northern Uganda. The project specific objectives are;

- To understand the impact of climate change on sesame production,
- To develop and promote climate smart sesame innovations
- To manage and share the knowledge generated with wider stakeholders.

The project is a consortium comprising of the National Semi Arid Resources Research Institute (NaSARRI), Uganda Oilseeds Producers and Processors Association (UOSPPA), FICA Seeds Ltd and Africa Innovations Institute (AfrII) as the lead implementer.

Basis

This report highlights observations of yield harvests of the experimental trials conducted in the Districts of Otuke, Lira and Amolatar. It however doesn’t give an entire picture of what transpired as data regarding weight of the yield, and on-farm field observations is not fully incorporated within.
The AfrII Communications Officer worked alongside the Field Technician-Ms Betty Alepo from NaSARRI and their Information Officer-Umar Kyeyune during this field work whose objectives were:

- To document the project achievements regarding the trial experiments.
- To capture and reflect on what the farmers have achieved (their views and what next).

For this specific exercise, we selected samples to represent the different plots on which the experimental trials were conducted at farmer level, to establish what type/kind of fertilizer was used and what chemicals were combined for the spraying to establish the best combination that gave the best results. (Betty/Walter to avail info on this)

The 3 districts visited include:

1. Otuke-3 farmers were visited i.e. Mr Opio John (Olilim), Mr. Abwango Patrick (Adwari) and Mr. Oyaro Benson (Orum).
2. Lira- Mr. Olot David (Agweng)
3. Amolator –Ms. Hellen Ogwal

**On-station activities at NaSSARI (16\textsuperscript{th} December 2016)**

Ms. Betty Alepo, the NaSARRI Field Technician –Oil Seed Programme took the two communications experts from AfrII and NaSARRI to the on-station field trials at the institute in Serere. The On station/ Demonstration field at NaSARRI is meant for farmers to see what is put in the experiments and then go and put to use this knowledge for better yield. The Demo fields are of 9 different candidate lines (Genotypes). On some plots, different fertilizer combinations were applied (Urea, SSP and MOP).

The project aims at improving livelihoods of the farmers and so, clean materials are taken to farmer’s fields for comparison with the farmer seed/local variety. When you compare, Yield from the released varieties outstands that from the local farmers’ variety. The local variety also succumbs very much to webworm.

Released varieties were distributed to farmers to give them chance to select among the few released varieties. They are then to compare the performance and make a selection that they will adopt basing on the crop yield and resistance to pests and diseases.

The on-station demonstration has 3 experiments including one on pathology (trying to evaluate 5 fungicides in relation to the disease (leaf spot) and the one seen to perform well will be popularized / recommended for use to the farmers. The on station field also has 20 Sesame lines screening for yield resistance to the pests and diseases as well as drought tolerance. This has also been planted multi-locational at the Technology Verification Centers (TVCs).

The fertilizer trials are for evaluating different fertilizer rates to establish which rates/ combination of fertilizer can give better /high yields (these different fertilizers are used at different combinations).

Yield data will guide on which is the best combination (this is not yet established).
Figure 1: Ms. Betty Alepo speaks to the Afril Communications Officer at the Institute on station demo-Serere

Figure 2: Ms. Alepo in one of the sesame fields at the On-station demo at the Institute

Figure 3: A growing Sesim 2 variety on the on-station field in Serere

Observed webworm infestation (though at a later stage when pods are out and capsules already formed, there is not much effect on the yield)

Figure 4: Sesim 3 variety (the crop is hairy both at maturity and when young)

Figure 5: Web worm infestation on one of the crop
FARMER VISITS 17th to 18th December 2016

Two experiments were conducted. (Local variety/farmer seed Vs the other improved variety seed of Sesim 2 and 3). There were two varieties for the fertilizer trial i.e. local and sesim2 varieties. However, there was no information on which different treatments were applied on the plots where treatment was identified. (Betty is to get details and share). Before the harvesting, each plot was tagged and labeled to avoid mixture of variety yield from different plots.

The first farmer visited was Mr. Opio John of Olibim Sub-county in Otuke District. He was however not available to take us through his experience with the experiments. His daughter wasn’t of much help either since she was not fully part of the exercise to observe the crop on the field and also did not partake in the harvesting.

It was observed that the yield from Mr. Opios’s trial plots was not very good. It was also observed that Plot 4 was completely shattered and nothing was harvested. This was due to delayed harvesting. The varieties evaluated include, Local variety (Achari), Sesim 2 and 3 with treatments. The treatments applied have not been specified due to missing data. (Betty is expected to avail this soon).

The second farmer visited, Mr. Oyaro Benson’s yield was observed to be quite impressive. The harvest was however not yet weighed to establish the yield harvest per plot. The first experiment was of two varieties, local and Sesim 2(with fertilizer and without fertilizer) of which he preferred the Sesim 2 (with fertilizer). The Sesim 2 (with spray) was observed to have done well.

Benson appreciated the Sesim 3 variety with fertilizer. “It looks nice and yields well. Also no insects disturb it, and because it looks nice, other people from here have expressed interest in this seed”
Bensons’ observations;

- He preferred the one with fertilizer because the yield was good and pledged to use fertilizer next year-2017.
- Experiments on the field, enabled him gain more experience in crop management including timely planting, timely weeding, and planting in rows
- Sesim 3 (with fertiliser) was chosen as the best variety for multiplication. “Next time if I want to plant, I want this seed” says Benson. He relayed his future plans. He plans to purchase a motorcycle after he multiplies Sesim 3 on large scale.

We also visited another farmer, Mr. Abwango Patrick of Adwari Sub-county in Otuke District. His yield was not that good. Mr. Abwango chose Sesim 2 (with spray) and plans to multiply more of it. His reasons for this choice;

- Even if you plant late, the yield is still ok, and even when there is scarcity of rain, it still comes out.
- He also chose Sesim 2 because to him, much as the yield is less, the crop performed better in the garden. He argues that for the Sesim 3 variety, if not for the spray you will not get good yield. But however with sesim 2 even if you don’t spray you get the good yield.

Figure 8 Mr. Benson with the yield he harvested from the trial experimental plots on his farm

Final farmer visits (18th December 2016)

Mr. Olot David of Agweng Sub-county in Lira District is a prominent farmer for oil seed crops. It was observed that he had the best yield.

He plans to grow more of the Sesim 2 variety. He based his choice on his observations of the crop on the field; “Sesim 2 performed very well in the field. There was no problem in the field, expect, the drought
hat hit at flowering stage was a disturbance” If not for the bad weather, he believes he would have gotten more than what he got.

“The variety has given good yield compared to the others” remarks Olot. He is most likely to grow 5 acres of Sesim 2 on his farm in -2017.

“Sesim 2 with fertilizer is good and has high susceptibility with pests and diseases, so when you spray you get a better yield” adds Olot.

He advised fellow farmers to concentrate in planting their oil seeds in rows for this helps in easy weeding, and gives reasonable yield.

On adoption of improved varieties, he advised fellow oil seed farmers to concentrate on improved seed rather than the local one.

For the treatment varieties, it was observed that the Sesim 3 with and without spray had almost similar quantities of the harvest. But also, the local variety without spray had more yield compared to the others.

Mr. Olot’s observations in this regard;

- With sesim 3 when you spray it does better than the other varieties. The spray prohibits some diseases that reduce the crop yield and in the field the yield is also ok.
- For this yield, the grain is bigger than that of the un sprayed yield. It is so white and nice to look at. Also when eating (tastes some raw SimSim) it is not sour like the other varieties. The taste also indicates that there is a lot of oil in it compared to the other two varieties.
- It has got bigger seeds

We managed to weigh some of Mr. Olot’s yield to get a clearer picture of it all, the data is however not yet fully compiled and will be included at a later time.
Our final visit landed us at Ms. Hellen Ogwal’s home in Amolatar District. It was observed that the yield here was fairly good. The farmer group chose Sesim 3 (with spray) based on the crops performance during the trial experiment.

Their observations:

- Tolerant to drought, pests and diseases.
- Whiter than the rest. Its white color will attract more market since the brownish simsim is rarely bought.
- Its production is very high and gets ready very quickly.
- Also when in the field, it attracts other farmers, its hairiness attracted their interest

Figure 11 Sesim 3 that the farmers have chosen to plant this year-2017
From the fertiliser experiment of farmers’ seed, sesame 2 & 3, Hellen had this to say “What we learnt from the experiment is that the farmers seed cannot do very well compared to the two varieties (Sesim 2&3). Despite the drought and heavy sunshine, these performed fairly on the field as can be seen in the harvest”

More observations;

- On applying fertilizer in the field, the plots with fertilizer had more yields than where there was none yet these were in the same plot, same length.
- For the local varieties, they did not like the yield because it has mixed varieties of Achara(local), sesim 2 and Sesim 3. They were very concerned with the seed mixture.
- Achara’s various colors (black, yellow, purple) in the field made it less interesting and less attractive.
- Sesim 2 with fertilizer did very well while in the field

Two methods were used during the planting on the trials; Broadcasting and row planting. The farmers observed that the ones where they were planted performed better than what was broadcast and that weeding was also easy. “The project is important to us because it has shown us which varieties to embrace for more yield. The farmers have realized that improved seed is what they need to start planting and we are thankful to the Project for this enlightenment” remarks Hellen Ogwal, the group Chairperson.

At the time of this documentation exercise, the farmers had already harvested, threshed and cleaned up the yield for storage. We were however given a simple demonstration of the threshing, winnowing and packing of clean seed for a fuller picture for this documentation.

Figure 12 A demo of how the dried sesame is threshed

The Challenges identified were that before threshing, birds were attacking the crop.
Summary of Farmers Observations-On farm and after harvest (the yield)

<table>
<thead>
<tr>
<th>Farmer</th>
<th>District/Sub-county</th>
<th>observation</th>
<th>verdict</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opio John</td>
<td>Otuke-Ollim subcounty</td>
<td>Most of his yield was shattered due to late harvesting.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| Benson Oyaro | Otuke District-Orum Sub county | • Very good performance of the crop in the field  
• The yield for Sesim 2 with fertilizer was good  
• The Experiments enabled him gain more experience in crop management including timely planting, timely weeding, and planting in rows  
• Sesim 3 (with fertilizer) is an option | Chose Sesim 3 (with fertilizer) Sesim 2 (with fertilizer) is an option |
<table>
<thead>
<tr>
<th><strong>Patrick Abwango</strong></th>
<th><strong>Otuke District-Adwari sub county</strong></th>
<th><strong>Sesim 2</strong> with spray</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timely planting</strong></td>
<td><strong>Even in late planting, the Sesim 2 yield is still ok,</strong></td>
<td><strong>He also chose Sesim 2 because to him, much as the yield is less, the crop performed better in the garden.</strong></td>
</tr>
<tr>
<td><strong>Also comes out when there is scarcity of rain</strong></td>
<td></td>
<td><strong>Sesim 3 variety, if not for the spray you will not get good yield unlike for Sesim 2</strong></td>
</tr>
<tr>
<td><strong>He also chose Sesim 2 because to him, much as the yield is less, the crop performed better in the garden.</strong></td>
<td></td>
<td><strong>Sesim 2 with spray</strong></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>David Olot</strong></th>
<th><strong>Lira District-Agweng subcounty</strong></th>
<th><strong>Sesim 2</strong> with spray</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crop management is very key</strong></td>
<td><strong>Sesim 2 performed very well in the field.</strong></td>
<td><strong>Sesim 2 (with fertilizer)</strong></td>
</tr>
<tr>
<td><strong>Row planting is very</strong></td>
<td><strong>Sesim 2 with fertilizer is good.</strong> It has high susceptibility with pests and diseases</td>
<td></td>
</tr>
<tr>
<td><strong>Field well maintained</strong></td>
<td><strong>He practiced row planting, weeded</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Hellen Ogwal | Amolator District | • management on the field is very important  
• Tolerant to drought, pests and diseases.  
• Whiter than the rest.  
• Its production is very high and gets ready very quickly.  
• when in the field, it attracts other farmers  
• plots with fertilizer had more yields than where there was none  
• Concerned with the seed mixture of the local variety  

Sesim 3 (with spray) | **Sesim 3 is good for its oil content**

- twice and sprayed.  
- Sesim 3 when sprayed does better than the other varieties. in the field the yield is ok.  
- Sesim 3 yield has bigger grain seeds than that of the un sprayed yield. Its white color is attractive. It doesn’t have a sour taste compared to the others. The taste indicates high oil content
(Achara(local), sesim 2 and Sesim 3)

- Achara’s various colors (black, yellow, purple) in the field made it less interesting and less attractive.
- Sesim 2 with fertilizer did very well in the field.

**General Observations, lessons learnt and Recommendations:**

- There is need to strengthen the capacity of oil seed farmers to help in the production and marketing of the Sesame oilseeds.
- Some of the farmers still need a clearer understanding of the importance of planting improved seed.
- The project has achieved a lot in extending services to the farmers for which they are very appreciative.
- There is need to identify market for the farmers’ oil seeds (Sesame).

**NOTE:** It’s important to get the farmers views because the projects objective is to get the farmers to see, understand and then choose what technologies work best for them.

**Report compiled and submitted by:**

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