Screening cowpea for *Alectra vogelii* resistance in the Arid semi-Arid lands (ASALs) of Kenya
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Achievements:

1. **Mapping major hot spot for *Alectra* weed in the ASAL region**

Twenty two questionnaires were used to carry out a base line survey to determine the major areas severely infested by *Alectra vogelii* weed in Mbeere, Kitui, Yatta, Nzaui, Makueni and Kibwezi. A total of 42 farmers (18 men and 24 women) were interviewed across the districts. Among the information collected include, damage to the crop, crop affected, mode of multiplication, number of years of existence, fields mostly attacked, measures of combating the weed, crops seems to lower the weed infestation among others.

![Fig. 1. Severely infested field by Alectra vogelii in Mbeere district](image)

**Farmers’ view**
The commonly infested crop is cowpea. Other crops affected include; common beans (Mwitemania), green grams and dolichus,

**Effects of *Alectra* weed**
Reduced yield (50-100%), yellowing (host), drying, and change taste/cooking.

<table>
<thead>
<tr>
<th>Mbeere (Kiriti or Kivia)</th>
<th>Kitui (Mwii wa nthooko)</th>
<th>Makueni &lt;20 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siakago</td>
<td>Yatta</td>
<td>Matiliku</td>
</tr>
<tr>
<td>Gachoka</td>
<td>Mating’ani</td>
<td>Nzaui</td>
</tr>
<tr>
<td>Kiririti</td>
<td>Mulango</td>
<td>Kikumini</td>
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<tr>
<td>Machang’a</td>
<td>Chuluni</td>
<td>Kaiti and Nziu</td>
</tr>
</tbody>
</table>

2. **Farmer and extension awareness of *Alectra vogelii***
Sharing Knowledge of the A.vogelii problem and management practices with farmers and extension providers involved farmer’s visits (during survey) and farmer’s field days. This involved display of Alectra weed plant, poster and show of severely infested fields where possible. This has been done at Kasikeu, Kampi ya mawe, Kyawango, Kyasioni and Kithimani. Farmers were encouraged to practice hand pulling before Alectra flowers, collect cowpea pods or any other host pods to save seed directly from the growing plant (Alectra), avoid dropping the pods or seeds on the soil or thresh them in field infested with Alectra, wash mud off tools, feet or shoe after working in infested fields
  • If possible, avoid grazing livestock in infested fields
  • Burn all uprooted Alectra in a deep hole to avoid spread of seeds and burning as a temporary measure to combat it.

3. Local cowpea germplasm collection

Fig. 2. Diversity of local cowpea grown by farmers

Areas of collection
Mbeere, Kitui, Makueni and Machakos.
Total accessions = 143
Criteria of collection
Preference
Use (vegetable/seed), Drought response, Pest/disease response and market

4. Screening for Alectra resistance and susceptibility

Total accessions screened = 143

Data collected Results
Days to flowering cowpea 44-77 days
Number of pods per plant 0-57
Days of Alectra germination 6 weeks
Number of Alectra per pot 0-37
Cowpea yield per genotype 0-84
Ten genotypes selected for Alectra resistance i.e. no Alectra germination and attachment.
Confirmation for resistance for the ten accessions in progress at Kiboko.

5. Evaluation of Fungal Pathogens for Biological Control of Alectra

Surveys to collect abnormally dying/wilting A. vogelii weed completed in Makueni and Kibwezi districts.

Fig.3. Wilting Alectra weed collected for Fuserium isolotion
More than 10 fungal isolates isolated from abnormally dying A. vogelii plants and multiplied on gritted sorghum substrate. Pathogenicity test for Alectra control in progress at Kiboko.