

Sustainable Nutrition and Agriculture Promotion – SNAP

Summary of AESA Data collected on IVS Rice, Cowpea, and Sweet Potato
2012 cropping season

A. Definitions

- AESA = Agro Eco-System Analysis
- AESA is a decision making process in crop production in order to achieve pertinent goal. It is a monitoring tool for the farmer.
- It is establishment by observation of the interaction between a crop/livestock and other biotic and abiotic factors co-existing in the field. This involves regular observations of the crop/livestock.
- It is a way of assembling what we are studying and placing into a process useful for decision making based on many factors.

B. Background

Purpose of AESA

- Promotes learning-by-discovery by learners from their own analysis.
- It guides farmers to critically analyze and make better decisions on their own fields.

Why AESA in a Farmer Field School?

- To improve decision-making skill, through a field situation analysis by observing, drawing and discussing.
- To improve decision making skills by presenting small group decisions for critique in the large group.

Agro Ecological Principles (AEP)

1. Grow a healthy crop
2. Let nature work
3. Observe and learn from your crop
4. Farmer becomes an expert

What to observe and learn from your crop

- Height of the crop
- Insect and rodent damage
- Colour of the leaves
- Weed infestation
- Deficiency symptoms
- Water level (flooding or drought)

C. Conducting AESA on crops

Steps:

		(cm)				(cm)		(cm)			Trial (Kg)	
Plant Population	1 Seedling per hill (T1)	68	19	6	Green	39	Brown	8.2	19	72	0.48	2nd
	2 Seedlings per hill (T2)	72	22	8	Green	41	Brown	9.1	22	79	0.52	1st
	3 Seedlings per hill (T3)	65	17	5	Green	36	Brown	7.3	17	68	0.46	3rd
	Unspecified seedlings (C)	59	14	4	Yellow /green	32	Brown	6.5	12	49	0.41	4th
Plant Spacing	20cmX 20cm (T1)	70	21	7	Green	40	Brown	8.3	21	74	0.49	2nd
	25cm X 25cm (T2)	74	25	9	Green	43	Brown	9.4	23	81	0.58	1st
	39cm X 30cm (T3)	69	19	5	Green	37	Brown	8.0	18	70	0.47	3rd
	Unspecified Spacing (C)	56	10	4	Yellow /Green	31	Brown	6.1	10	46	0.39	4th

General Observations: - Experiment 1 and 2

From the above Agronomic Data collected using the parameter for collecting Data on IVS Rice 'Plant Population Experiment', NERICA-L19 Rice variety planted with Trial of 2 seedlings/hill resulted in better growth performance and produces better yield results; followed by the 1 seedling/hill Trials. The 2 seedling/hill Trial proved to have produced more tillers, resulting to more panicles/hill and so more grains/hill and finally more grains per unit area. Similarly, NERICA L-19 Rice variety planted at a Spacing of 25cm X 25cm resulted in better growth performance and produces better yield results (having more tillers, more panicles and consequently more grains per unit area) ; followed by the 20cm X 20cm Trials.

Recommendations: Experiment 1 and 2

As per their observations during the conduct of AESA from the first to the last Data recorded, Participants are strongly being convinced that NERICA L-19 planted with 2seedling/hill Trial and Spaced 25cm X 25cm is worth taking for adoption on their own individual farms, as being recommended by them. With all Agronomic practices carried out (land preparation techniques, water and pest management techniques, better farm sanitation practices etc.) held constant for all Trials, NERICA L-19 planted with 2 seedling/hill and Spaced 25cm X 25cm has therefore being recommended by FFS Participants for adoption in their own individual farms next farming season.

Summary AESA Data collected for Cowpea (Beans) - FY'2012 FFS Groups; Koinadugu District

Experiments Conducted: Two Experiments were conducted as follows:-

Experiment 1: Plant Population – Unspecified seeds/hole as the Control(C) vs. 1 seed/hole (T1) vs. 2 seeds/hole (T2); all Trials planted at 60cm X 60cm on Flat.

Experiment 2: Plant Spacing – Unspecified Spacing as the Control (C) vs. 40cm X 40cm (T1) vs. 60cm Xx 60cm (T2) vs. 80cm X 80cm (T3); all Trials planted at 60cm X 60cm with 2 seeds per hole

Experiment	Trial/Treatment	Parameter for Agronomic Data (Average summary Data collected per Trial)										Average summary Yield Data received per meter square for each Trial (Kg)	Performance Ranking of the Growth and Yield of each Trial
		Plant height (cm)	No. of leaves	Leaf color	Leaf length (cm)	Root color	Root length (cm)	No. of pods per stand	No. of seeds per pod	Cano py Radius (cm)	No. of lateral branches		
Plant Population	1 seed per hole (T1)	38.0	56	Green	9.2	Brown	9.3	25	9	58.2	12	0.73	2nd
	2 Seeds per hole	34.2	52	Green	8.0	Brown	8.6	21	7	47.9	10	0.75	1st

	(T2)												
	Unspecified Seeds (C)	27.3	38	Green	5.8	Brown	6.9	13	5	37.4	06	0.57	3rd
Plant Spacing	40cm X 40cm (T1)	39.8	59	Green	9.6	Brown	9.5	27	10	59.4	14	0.74	2nd
	60cm X 60cm (T2)	37.1	54	Green	8.4	Brown	8.7	23	8	49.7	12	0.80	1 st
	80cm X 80cm (T3)	31.3	46	Green	8.0	Brown	8.3	20	7	45.0	09	0.62	3rd
	Unspecified Spacing (C)	28.4	41	Green	5.3	Brown	6.1	12	5	34.3	05	0.51	4th

General Observations: Experiment 1 and 2

Cowpea (Black-eye Beans) planted with a Trial of 1 seeds/hole resulted in better growth performance and produces better yield results, followed by the 2 seed/ hole Trial; taking into account the Parameter used to collect Agronomic Data on Cowpea (Beans) - ‘Seed Population Experiment’. With the 2 seed/hole Trial, the result has been maximum plant height, more lateral branches, and wider canopy radius, good quantity of pods /stand with a good number of seeds in each pod. Similarly, Cowpea (Black-eye Beans) variety planted at a Spacing of 60cm X 60cm resulted in better growth performance and produces better yield results (having more lateral branches and consequently more pods with each pod well filled with seeds and therefore more seeds per unit area); followed by the 40cm X 40cm Trials.

It was further observed that 2 weeks after planting, there was presence of pests (grasshoppers, beetles) feeding on the leaves and the rains were heavy. 4 weeks after planting, some plants were dying but this stopped as the rains subsided. Vegetative growth performance of the crops improved as the rains get reduced and pod formation was visible although some pods get rot with intermittent heavy rain fall in the 5th week. The pods get matured in the 6th week after planting and harvesting was done.

Recommendations: Experiment 1 and 2

As per their observations during bi-weekly AESA Data collection exercise, and with all agronomic practices held constant for all the Trials; FFS Participants have arrived at a conclusion that Cowpea -Black-eye Beans variety planted with 1 seed/hole and Spaced 60cm X 60cm is worth for adoption on their own individual farms next farming season; as was stated by Participants themselves.

Summary AESA Data collected for Sweet Potato – FY’2012 FFS Groups; Koinadugu District

Experiments conducted: Two Experiments were conducted as follows:-

Experiment 1: Plant Spacing – Unspecified Spacing as the Control (C) vs. 40cm x 40cm (T1) vs. 50cm X 50cm (T2) vs. 60cm X 60cm (T3); all Trials planted on Ridges with 1 cutting per stand of 25cm length.

Experiment 2: Length of cutting: Unspecified length of cutting as the Control (C) vs. 25cm length cutting (T1) vs. 35cm length cutting (T2) vs. 45cm length cutting (T3) ; all Trials planted at 40cm X 40cm Spacing on Ridges with 1 cutting per stand.

Experiment	Trial/Treatment	Parameter for Agronomic Data (Average summary Data collected per Trial)	Average summary	Performance Ranking of the
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		No. of leaves	Leaf color	Leaf length (cm)	No. of insect-fed leaves	No of lateral branches	Yield Data received per meter square for each Trial (Kg)	growth and Yield of each Trial
Plant Spacing	40cm X 40cm (T1)	90	Green	8.2	0	12	1.37	1st
	50cm X 50cm (T2)	86	Green	7.9	0	10	1.33	2nd
	60cm X 60cm (T3)	74	Green	7.1	0	08	1.25	3rd
	Unspecified Spacing (C)	58	Green	6.2	9	06	1.13	4th
Length of Cutting	25cm length (T1)	82	Green	8.0	0	11	1.25	1st
	35cm length (T2)	74	Green	7.6	0	08	1.21	2nd
	45 cm length (T3)	68	Green	6,9	0	07	1.17	3rd
	Unspecified length (C)	52	Green	6.0	6	05	1.10	4th

General Observations: Experiment 1 and 2

Taking into account the parameter used to collect bi-weekly AESA Data, Sweet potato- Clone 140 variety planted with Spacing of 40cm X 40cm have proven to have better growth performance and produces better yield results. With the 20cm X 20cm Trial, more branches are expected to develop which consequently produces more tubers in the soil because of the long stretch on ridges. Also, Sweet potato planted with 25cm length Cutting produces better growth performance and higher yields per unit area followed by the 35cm length Cutting because of the more lateral branches it produced also; and consequently the more tubers per unit area.

Recommendations: Experiment 1 and 2

Based on the bi-weekly AESA Data collected during the cycle of the crop, and with all the agronomic practices held constant for all Trials, FFS Participants have viewed Sweet potato – Clone 140 variety planted with 25cm length Cutting and Spaced 40cm X 40cm is worth for adoption on their own individual farms for the next farming season after their training; as was clearly stated by all Participants.