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## INFLUENCE OF ORGANIC FARMING PRACTICES ON SESAME

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### ABSTRACT

Afield experiment was conducted during 2009-2010, 2010-2011 and 2011-2012 at Agricultural Research Station, Yelamanchili, to assess the impact of organic farming practices on sesame. The experiment was laid in non replicated plots. Results of the kharif experiment showed that Improved practices (FYM @ 10 t/ha, 40: 20:20 kg NPK/ha, Line Sowing) T2 was recorded highest yield 3.72 Q/ha as it may be supplemented with all the required nutrients followed by T5 (Neem cake @ 1.7 t/ha) 2.44 q/ha. Rabi experimentation also showed that Improved practices (FYM @ 10 t/ha, 40: 20:20 kg NPK/ha, Line Sowing) T2 was recorded significantly highest yield 5.86 Q/ha, however organic treatments T3, T4 and T5 were at par. T1- Farmers' practice (FYM 10 t/ha, no chemical fertilizers, broad casting) recorded lowest yield. Other parameters like plant height, number of branches and number of capsules also showed same trend.

The world is looking for chemical free farm produce. The need is more so in case of vegetable oils. The productivity of sesame under organic farming and the influence of such practice on oil content and composition need to be evaluated.

Narkhede *et al.*, (2001) reported that the application of organic manures as castor cake at the rate of 1.0 t/ha of farm yard manure @ 5.0 t/ha together with the recommended level of nitrogen (50 kg N/ha) applied in two equal splits at sowing and three weeks later, was found to be the most effective strategy to maximize the productivity of sesame under assured rainfall conditions. Jaishankar and Wahab (2005) reported that the application of recommended dose of NPK + vermicompost at 5 t/ha + azospirillum recorded the highest growth and yield components like plant height, leaf area index, dry matter production, number of capsules per plant and number of seeds per capsule. Sampath Kumar *et al.*, (2002) observed that the mycorrhizal inoculation increased plant growth as well as root and shoot biomass. Among the five genera tested, *Glomus spp.* Produced the highest increase in growth. In another study, Rani Devi *et al.*, (2007) observed that the cost of production with organic manures and bio-pesticides



was reduced, when compared to the application of inorganic fertilizers and pesticides.

## Materials and Methods

The field experiment was conducted during Kharif and Rabi seasons of 2009-2010, 2010-2011 and 2011-2012 at Agricultural Research Station, Yelamanchili, under Rainfed during Kharif and under well irrigated condition during Rabi. Initial soil analysis revealed that the soil is sandy loam with PH-7.0, EC ( $\text{dsm}^{-1}$ ) – 0.22, OC% - 0.52, Available N -241 Kg/ha, Available K<sub>2</sub>O – 392 Kg/ha. The experiment was laid out in non replicated plots. The plot size was 10x6 meters with a spacing of 30x15 cms. Blanket application of FYM @ 10t/ha was applied at the time of second ploughing. Recommended dose of fertilizer 40:20:20 NPK kg/ha was given to the crop with half N, entire P and K during the last ploughing. Remaining half N was top dressed at the time of first hoeing in inorganic plots. The treatments are imposed in organic plots only.

T1- Farmers' practice (FYM 10 t/ha, no chemical fertilizers, broad casting)

T2- Improved practices (FYM @ 10 t/ha, 40:20:20 kg NPK/ha, line sowing)

T3- FYM @ 18 t/ha

T4- Vermicompost @ 6 t/ha

T5- Neem cake @ 1.7 t/ha

(On N equivalence of 90 kg N/ha- 50 kg from FYM and 40 kg N)

(FYM – 0.5%; Vermicompost-1.5%; Neem cake-5.2%)

All the agronomic practices were followed and the crop was kept free from pests and diseases. Observations on Yield and Yield attributing characters were recorded at harvest. The results of the experimentation showed same trend on all the three years, hence the pooled data was presented.



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## Results and Discussion

The experiment was laid in non replicated plots. Pooled results of the kharif experiment showed that Improved practices (FYM @ 10 t/ha, 40: 20:20 kg NPK/ha, Line Sowing) T2 was recorded highest yield 3.72 Q/ha as it may be supplemented with all the required nutrients followed by T5 (Neem cake @ 1.7 t/ha) 2.44 q/ha. Other parameters like plant height, number of branches and number of capsules also showed same trend.

Rabi experimentation also showed that Improved practices (FYM @ 10 t/ha, 40: 20:20 kg NPK/ha, Line Sowing) T2 was recorded significantly highest yield 5.86 Q/ha, however organic treatments T3, T4 and T5 were at par. T1- Farmers' practice (FYM 10 t/ha, no chemical fertilizers, broad casting) recorded lowest yield. Improved practices both with organic and inorganic sources (FYM @ 10 t/ha, 40: 20:20 kg NPK/ha, Line Sowing) will give highest yield. Only organic source may not supplement all the essential nutrients quickly even though they applied in large quantities. However to maintain good soil condition and stable yields it is always better to go with organic supplementation.

## REFERENCES

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Yield and yield parameters as influenced by organic and inorganic practices on *Sesamum*

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**Table -1 Pooled data of three years for Kharif Sesamum:**

<b>Treatments</b>	<b>Plant height (cms)</b>	<b>No. of Branches</b>	<b>No. of Capsules</b>	<b>Seed yield Q/ha</b>
T1( FYM 10 t/ha)	131	3.4	54.4	2.19
T2 (FYM @ 10 t/ha, 40:20:20 kg NPK/ha)	153	3.8	87.3	3.72
T3 (FYM @ 18 t/ha)	134	3.6	64.3	2.30
T4 (Vermi@ 6 t/ha)	132	3.0	59.3	2.03
T5 (Neem cake @ 1.7 t/ha)	138	3.8	70.7	2.44

Yield and yield parameters as influenced by organic and inorganic practices on Sesamum

**Table -2 Pooled data of three years for Rabi Sesamum**

<b>Treatments</b>	<b>Plant height (cms)</b>	<b>No. of Branches</b>	<b>No. of Capsules</b>	<b>Seed yield Q/ha</b>
T1( FYM 10 t/ha)	79.8	3.1	74.2	3.56
T2 (FYM @ 10 t/ha, 40:20:20 kg NPK/ha)	96.0	3.9	96.2	5.86
T3 (FYM @ 18 t/ha)	82.5	3.4	78.3	4.48
T4 (Vermi@ 6 t/ha)	81.6	3.3	77.9	4.22
T5 (Neem cake @ 1.7 t/ha)	87.2	3.7	80.6	4.67