



## Effectiveness of training programme on oil palm technologies for multipurpose extension officers of State Department of Horticulture, Andhra Pradesh

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(Manuscript Received: 21-02-2019, Revised: 02-05-2019, Accepted: 07-06-2019)

**Keywords:** Cultivation practices, oil palm, pre-evaluation and post-evaluation, training

ICAR- Indian Institute of Oil Palm Research is conducting training programmes regularly to the field officers, extension officials and other oil palm stakeholders by inviting nominations or based on request received from the stakeholders. Government of Andhra Pradesh has proposed training programmes to the newly recruited Multipurpose Extension Officers (MPEO'S) as they are the field level extension functionaries and in regular contact with the farmers and hence they need to have knowledge on the crops growing in their areas (Bhati, *et al.*, 2012). In this context ICAR- IIOPR provided training to MPEO'S of the West Godavari and Krishna districts of Andhra Pradesh under the NMOOP funded scheme - "Strengthening of Training on Oil Palm Production Technologies for Stakeholders".

The two days training programme is covering lectures on planting, cultivation, irrigation management, fertilizer management, intercrops in oil palm, pests and disease management and harvesting indices in oil palm on the first day and field visits and demonstrations organised on the second day. Literature related to oil palm crop production was provided to the participants. Pre and post evaluations were conducted to assess the knowledge gained by the participants. A study has been conducted with an objective to generate

information on the knowledge gained by the participants after attending training programme.

Before conducting the training programme a pre evaluation test was conducted to assess the level of knowledge of participants using a well structured questionnaire consisting 24 questions from different aspects of oil palm cultivation *viz.*, planting, cultural practices, irrigation management, fertilizer management, pest and disease management and harvesting indices. Similarly post evaluation test was also conducted to evaluate the knowledge gained by participants using a questionnaire with questions related to the curriculum of the training imparted.

Out of total 150 members nominated, 82 officers attended the training and the pre and post evaluation tests were carried out. The total scores for each and every aspects was analysed and the individual responses were noted. Differential gain in knowledge among various practices was measured using Wilcoxon signed rank test.

The results in Table 1 indicated an overall improvement in knowledge gained by 32 per cent on planting and cultural practices in oil palm. Practice-wise increase in knowledge of extension officials on pit size to be followed was 52 per cent, followed by type of soils suitable for oil palm

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**Table 1. Distribution of respondents based on their knowledge on planting and cultural practices in oil palm (n=82)**

Sl. No.	Planting and cultural practices	Pre-evaluation		Post-evaluation		Improvement	
		n	(%)	n	(%)	n	(%)
1.	Soils suitable for oil palm cultivation	30	37	68	83	38	46
2.	Pit size for planting	29	35	72	88	43	52
3.	Herbicide application	52	63	64	78	12	15
4.	Intercultural operations while growing intercrops	46	56	66	80	20	24
5.	Ablation	9	11	38	46	29	35
6.	Pollination	8	10	23	28	15	18
7.	Growing of intercrop	8	10	35	43	27	33
<b>Average</b>		<b>26</b>	<b>32</b>	<b>52</b>	<b>64</b>	<b>26</b>	<b>32</b>

cultivation (46%), ablation (removal of inflorescence in both male and female of oil palm within the first three years of its planting in the main field) 35 per cent, growing of intercrops (33%) and intercultural operations while growing intercrops in oil palm (24%), pollination (18%) and herbicides application (15%) in oil palm. The results are in line with the findings of Singh Bacchu *et al.* (2018). This could be due to the effective delivery of the message in simple, clear and understandable manner coupled with simplicity of the technologies.

Results in Table 2 indicated that the extension

officials got an overall 26 per cent improvement in knowledge in irrigation management of oil palm. Practice-wise increase in knowledge of extension officials on the effect of irrigation on oil palm yields is 41 per cent followed by efficient method of irrigation and water conservation practices 40 per cent, feeding root zone depth of oil palm 15 per cent and water requirement of oil palm per day by 9 per cent. This increase in gain in knowledge may be due to importance of the topic in oil palm cultivation and participants interest to learn the technologies and transfer them to farmers effectively.

**Table 2. Distribution respondents based on their knowledge on irrigation management of oil palm (n=82)**

Sl. No.	Irrigation Management	Pre-evaluation		Post-evaluation		Improvement	
		n	(%)	n	(%)	n	(%)
1.	Water requirement	38	46	45	55	7	9
2.	Root zone depth for providing irrigation	24	29	36	44	12	15
3.	Effect of Irrigation on yields	24	29	58	71	34	41
4.	Efficient method of irrigation and water conservation practices	40	49	73	89	33	40
<b>Average</b>		<b>32</b>	<b>38</b>	<b>53</b>	<b>65</b>	<b>22</b>	<b>26</b>

**Table 3. Distribution of respondents based on their knowledge on fertilizer management in oil palm (n=82)**

SI. No.	Fertilizer Management	Pre-evaluation		Post-evaluation		Improvement	
		n	(%)	n	(%)	n	(%)
1.	Split application of fertilizers	30	37	64	78	34	41
2.	Growing green manure crops	29	35	52	63	23	28
3.	Symptoms of magnesium deficiency	23	28	54	66	31	38
4.	Symptoms of boron deficiency	31	38	56	68	25	30
5.	N:P:K ratio	35	43	61	74	26	32
6.	Effect of fertilizers on yields	25	30	52	63	27	33
<b>Average</b>		<b>29</b>	<b>35</b>	<b>57</b>	<b>69</b>	<b>28</b>	<b>34</b>

Results from the Table 3, showed that an overall 34 per cent improvement in knowledge in fertilizer management of oil palm. The practice wise improvement in knowledge of extension officials on number of split dose of fertilizers required for oil palm per year was 41 per cent followed by magnesium deficiency symptoms in oil palm 38 per cent, effect of fertilizers on oil palm yields 33 per cent, N: P: K ratio (32 %) of oil palm per year, boron deficiency symptoms (30 %) and green manures crops (28 %) can be grown in oil palm gardens to conserve moisture. This may be due to impressive lecture, demonstration on fertilizer application, field visit on identification of nutrient deficiency symptoms and control measures.

The results in the Table 4 revealed that an overall increase of 18 per cent in knowledge of the extension officials on disease and pest management in oil palm was observed. The practice wise improvement in knowledge of the participants on fungicides which are not recommended for oil palm plantations was 39 per cent followed by rodent management 24 per cent. Information on the identification of ganoderma symptoms in oil palm was 22 per cent, bud rot symptoms identification in oil palm was 13 per cent, bunch rot symptoms (10 %) identification and leaf eating caterpillar and bag worm (2 %) management. This may be due to first time exposure to this kind of knowledge.

**Table 4. Distribution of respondents based on their knowledge on plant protection measures in oil palm (n=82)**

SI. No.	Plant protection measures	Pre-evaluation		Post-evaluation		Improvement	
		n	(%)	n	(%)	n	(%)
1.	Management of leaf eating caterpillar and bag worm	29	35	31	38	2	2
2.	Rodent management	33	40	53	65	20	24
3.	Ganoderma symptoms	25	30	43	52	18	22
4.	Bud rot symptom	24	29	35	43	11	13
5.	Bunch rot management	14	17	22	27	8	10
6.	Fungicides to be avoided in oil palm cultivation	5	6	37	45	32	39
<b>Average</b>		<b>22</b>	<b>26</b>	<b>37</b>	<b>45</b>	<b>15</b>	<b>18</b>

**Table 5. Distribution of respondents based on their knowledge on harvesting indices of oil palm(n=82)**

SI. No.	Harvesting	Pre-evaluation		Post-evaluation		Improvement	
		n	(%)	n	(%)	n	(%)
1.	Harvesting indices of oil palm	57	70	77	94	20	24

**Table 6. Level of significance in knowledge gain by the participants of training on oil palm cultivation practices (n=82)**

SI. No.	Practice	Signed rank statistic (S)	P-value
1.	Planting and cultural activities	1308.0	<0.0001
2.	Fertilizer management	1224.5	<0.0001
3.	Plant protection	826.5	<0.0001
4.	Irrigation management	709.5	<0.0001
5.	Harvesting	125.0	<0.0001
	<b>Overall</b>	<b>1660.5</b>	<b>&lt;0.0001</b>

Table 5 revealed that an overall increase in knowledge of the trainees in harvesting indices of oil palm by 24 per cent. This may be due to good impressive lecture and skill demonstration in identification of harvesting indices and harvesting of bunches from tall palms.

The results of the Table 6 indicated that an overall significant improvement in knowledge gained from pre training to post training on the following parameters *viz.*, planting and cultural activities was 1308.5 followed by fertilizer management (1224.5), plant protection (826.5), irrigation management (709) and harvesting (125).

Realizing the importance of the training topics through simple teaching methods, participants gained knowledge in the respective areas, and showed significant difference in gaining knowledge. Importance of irrigation and fertilizers in oil palm cultivation, drawn the attention of participants of training programme as the plantation management leads to 25 per cent increase in yields (IIOPR Annual report 2015-16), thus it showed maximum increase in knowledge. Since the pest

and disease attack in oil palm is less, hence importance for gaining knowledge in these area by the participants was less. The pre evaluation results also showed that they are not having much prior knowledge in these aspects.

Improvements in knowledge were noticed mainly in case of simple technologies like fertilizer management, planting and cultural practices, irrigation management, harvesting indices of oil palm. Reorientation of the methodology by including skill demonstrations, creating learning by doing experiences *etc.*, would increase the knowledge of the trainees.

## References

- Bhati, D. S., Verma, J. R., Seema Jasuja, Srivastava, A. K. and Sindhu, B. S. 2012. Impact of on campus trainings conducted by the KVK Sriganaganagar on the knowledge level of farmers friends (Krishak Mitras). *Agriculture Update* 7(1): 33-36.
- Singh Bacchu, L. C. Meena, S. R. Verma and Ramkishan Meena. 2018. Impact of KVK training programmes on Guar (cluster bean) production technology. *International Journal of Agriculture Innovations and Research* 6 (4): 89-91.