



**Ministry of Agriculture, Livestock and Irrigation**  
**Department of Agriculture, Mandalay Region**  
**Myingyan District, Taungtha Township**



# **On-farm Evaluation of Monsoon Groundnut Varieties for Adaptation and Adoption in Taungtha Township (2019-2020)**

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# Introduction

- ❑ Groundnut is one of the most important crops for domestic oil supply because of high oil content (>100 viss of oil per acre).



*(Reference: Groundnut GAP Guideline, 2017)*

- ❑ It also provides many **health benefits**:
  - a) Skincare
  - b) Lower cholesterol levels
  - c) Improve heart health
  - d) Improve nervous system
  - e) Reduce the risk of cancer



*(Reference: Seven surprising benefits of peanut oil by John Staughton, (BAsc, BFA), 2020)*

- ❑ It occupies about **(36)%** of total monsoon crops cultivated areas, and **(68)%** of oil crops in Taungtha Township.



# Problem Statement

In Myanmar, edible oil is always short of demand and self-sufficiency rate is only (67) %.

*(Reference: Food Security and Natural Disasters: Country Status Paper)*



Imported 7000 tons of palm oil in 1990 and 75000 tons in 2020.

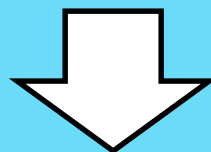
*(Reference: www.myawady.net.mm.MWD webportal,2020 )*



Palm oil(low quality) has a high saturated fat content, which can be harmful to cardiovascular health. *(Reference : www.independent.co.uk,2020)*

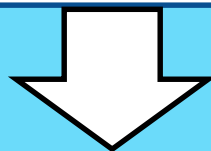


**It needs to promote edible oil crops production especially groundnut based on consumers' preference and health benefits.**



### Current Situation of Groundnut Cultivation in Taungtha Township

- ❑ Climate change impact such as irregular rainfall and increase in temperature is a serious issue not only in groundnut production but also in other seasonal crop production.
- ❑ Majority of farmers use local varieties which is adaptable to local areas but it gives low crop yields.



**It needs to find out Groundnut crop varieties which give higher crop yield and also adaptable with recent climate change in Taungtha areas.**

# Objectives

- (1) To compare the yield and yield components of five groundnut varieties.
- (2) To compare cost and benefit of five groundnut varieties
- (3) To select the adaptable and high yielding groundnut variety through crop yield data and farmers' visual observation

# Materials and Methods

- ❑ Farmer name - U Kyi Hlaing
- ❑ Village name - Khan Pin
- ❑ Sown acre - 1.00
- ❑ Trial varieties - Sinpadatha -11,  
YZG-13014, Magwe-16,  
YZG-99013, YZG-13001
- ❑ Seed source - DAR, Myingyan
- ❑ Sowing date - 29.7.2020
- ❑ Spacing - 18 " x 4 "
- ❑ pH - 6.35



❖ **Farmers' favorite variety is selected by 40 farmers.**

# Weather Condition in Taungtha Township

No	Month	Normal		2020		Difference	
		Rainy day	Inch	Rainy day	Inch	Rainy day	Inch
1	April	1	0.40	1	0.08	-	(-) 0.32
2	May	6	4.03	3	2.52	(-) 3	(-) 1.51
3	June	5	3.19	6	5.57	(+) 1	(+) 2.38
4	July	5	2.37	5	2.16	-	(-) 0.21
5	August	7	4.36	5	3.05	(-) 2	(-) 1.31
6	September	8	6.63	7	5.55	(-) 1	(-) 1.08
7	October	6	5.49	5	1.06	(-) 1	(-) 4.43
8	November	2	1.30	5	2.42	(+) 3	(+) 1.12
	<b>Total</b>	<b>40</b>	<b>27.77</b>	<b>37</b>	<b>22.41</b>	<b>(-) 3</b>	<b>(-) 5.36</b>

# Monsoon Groundnut Varieties Trials at (73) Days After Sowing



# Care and Management

## Fertilizer application

Basal - FYM (3.5) ton/ac

Armo compound fertilizer (10:10:5) 50 kg/ac

## Weeding

Intercultivation - 20 DAS, 40 DAS

Hand weeding - 20 DAS, 40 DAS

## Pest and Disease Control

Groundnut Leaf miner - (Chlorpyrifos+Cypermethrin) 250cc/ac

Cercospora Leaf spots - (Difenoconazole ) 50 cc/ac

# Monsoon Groundnut Varieties Trials at Harvesting Time (11.11.2020)



# Results and Discussion

No	Factors	Sinpadath a 11	YZG 13014	Magwe 16	YZG 99013	YZG 13001
1	Type of plant	Erect	Erect	Erect	Erect	Erect
2	Duration (DAS)	105	105	105	105	120
3	Plant height (inches)	16	12.5	13	14	11.5
4	No. of lateral branch	5	5	4	5	5
5	(50) % flowering days	29	29	25	25	29
6	No.of filled pods per plant	7.20	6.90	6.85	6.65	5.40



**Sinpadatha 11**



**YZG -13014**



**Magwe-16**



**YZG -99013**



**YZG -13001**

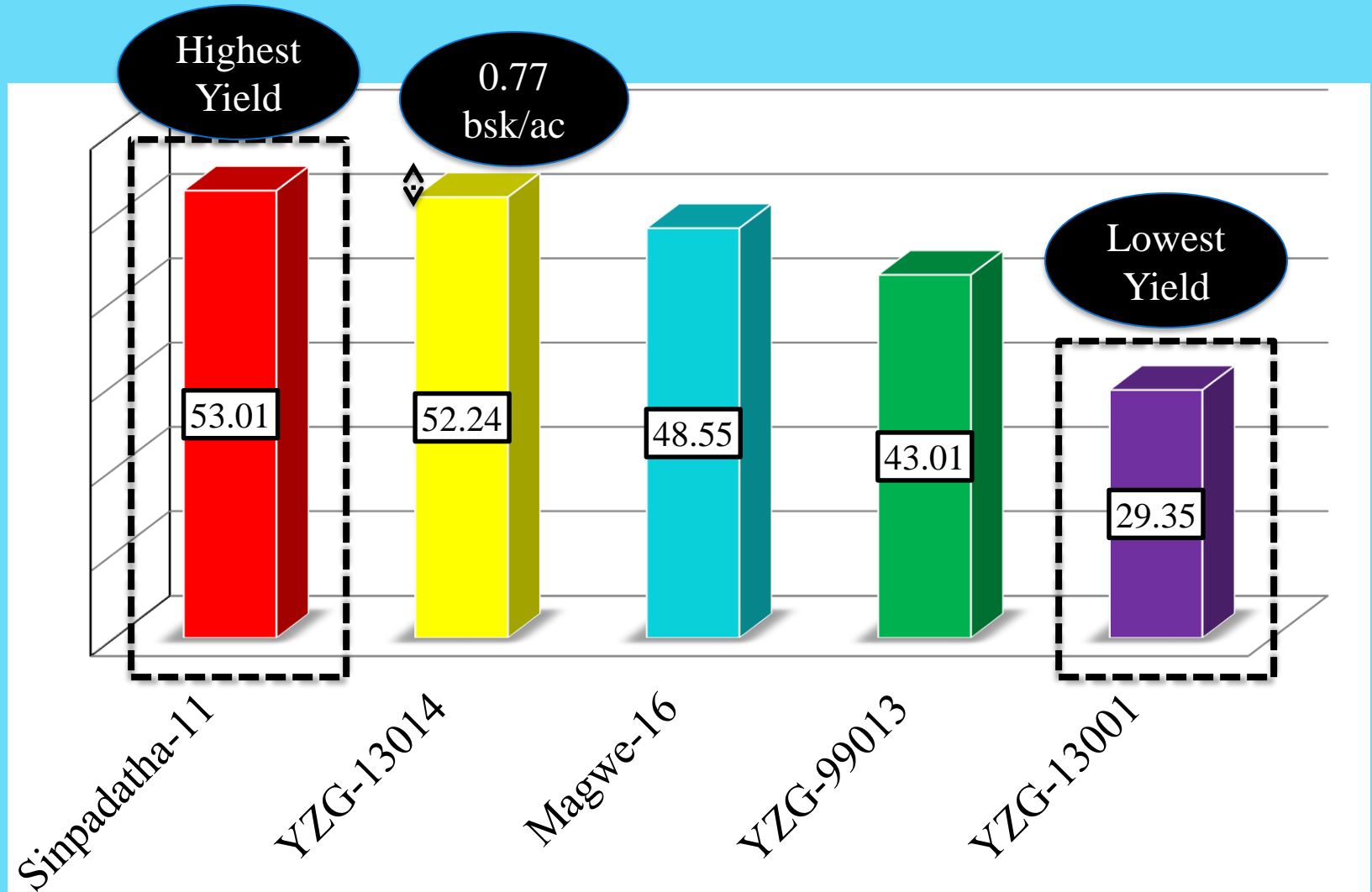
❖ Data were collected from five sample plants for each variety weekly.

# Results and Discussion

No	Factors	Sinpadatha - 11	YZG - 13014	Magwe- 16	YZG - 99013	YZG - 13001
1	Yields of ten plants (kg)	0.18	0.13	0.12	0.114	0.08
2	Hundred pods weight(g)	199	196	180	163	131
3	Hundred grains weight(g)	74	70	68	66	57
4	Percentage of filled grains (%)	72.22	68.97	66.67	58.82	54.55



# Comparison of Yields(bsk/ac)among Five Varieties



# Comparison of Gross Revenues among Five Varieties

No	Varieties	Yields per acre (bsk/ac)	Costs of production per acre (Kyats)	Price per basket (Kyats)	Gross Benefit (Kyats)	Gross Revenues (Kyats)	Cost : Benefit
1	Sinpadatha-11	53.01	392800	10000	530100	137300	1.35
2	YZG-13014	52.24	392800	10000	522400	129600	1.33
3	Magwe-16	48.55	392800	10000	485500	92700	1.24
4	YZG-99013	43.01	392800	10000	430100	37300	1.09
5	YZG-13001	29.35	392800	10000	293500	(-)99300	0.75

# Farmers Select their Favourite Variety



# Conclusion

Farmers' favorite variety- Sinpadatha -11

## 1. Yield and Yield Components

- Higher yield
- More filled pods per plant
- Higher Uniformity of pods

## 2. Cost and Benefit

- Higher Profit

## 3. Locally Adaptation

- Drought resistance, Pest and disease resistance
- Higher oil content compare with local varieties
- Have potential to provide domestic eatable oil requirement
- More food for dairy farm
- Adaptable with Taungtha region



# Conclusion

## Second most Favorite Variety in Local area\_YZG 13014

- ❑ YZG-13014 is the second most favorite variety by farmers because of giving small yield difference (0.77 bsk/acre) and second most higher Cost and Benefit ratio compared to Sinpadatha-11.
- ❑ It has a good potential for cultivation in Taungtha Township although the percentage of oil content has not known yet.



# Conclusion

## Least Performance Variety in Local area\_YZG 13001

### 1. Yield and Yield components

- Lowest yield
- Least filled pods per plant
- Uneven pods size with more one seeded pod

### 2. cost and benefit

- No profit

### 3. Locally adaptation

- Lack of drought resistance
- Longest duration variety
- Less food for farm animals
- Not adaptable to the local climatic condition



# Suggestion

To fulfill the national self sufficiency of edible oil

Promotion of edible oil crop production

To reduce the health disadvantages of low quality edible oils

With GAP  
With climate and locally adaptable varieties

# Future plan

- Seed production demonstration plots with Sinpadatha-11 variety will be conducted.
- Farmers are linked to seed production farms to get enough quality seed in time.

A woman wearing a wide-brimmed straw hat and a checkered shirt is smiling while sitting on a wooden cart. The cart is overflowing with harvested potatoes, still attached to their green foliage. The cart is being pulled by a white ox. The background shows a cloudy sky and a thatched-roof building in the distance.

Thanks for  
your kind  
attention!