



ONION PILOT - EAST WEST SEEDS

yearly report 2017/2018

1 Design and implementation

1.1 Objectives of the demonstrations

East West Seeds' (EWS) first year onion pilot consisted of the testing of an improved open pollinated onion cultivar combined with improved farming practices in four different townships in the Myanmar dry zone (Pakokku, Salin, Pwint Phyu and Seik Phyu). In every township, the EWS Knowledge Transfer (KT) team worked with 16 demonstration farmers, at whose plots technical training activities were conducted for the demonstration farmer and other attending trainees.

Prior to the onion pilot as carried out by EWS, the following objectives were formulated:

- Farmers obtain a higher yield under improved cultivation conditions when compared to the local cultivar(s)
- Farmers experience that the EWS cultivar will have equal to better storage characteristics and market acceptance
- Farmers understand the agronomic and economic benefits of reinvesting in new seed (more farmers are adopting EWS variety as compared to self-saved seed)

1.2 Cultivars and recommended cultivation practices used

1.2.1 Onion cultivars used

The onion cultivar that was tested is the EWS cultivar Shwe La Woon 406. This is an open pollinated (OP) cultivar with similar characteristics as the local cultivars in terms of colour and pungency, but with higher yield potential and better storage characteristics.

1.2.2 Recommended practices used in the pilots

The onion crops were cultivated according to EWS' recommended cultivation practices, of which main practices are:

- Seed bed preparation, nursery management and transplanting
- Well-cultivated soil and raised beds or hills for strong root and plant growth
- Narrow paths for smooth irrigation and drainage
- Increased spacing (15 cm) for large onions
- Correct use of fertilizer and pesticides

See the Onion Crop Guide (EWS) on the VegImpact website for the complete list of recommended practices¹.

1.3 Implementation arrangements in Magway

It was agreed that EWS's Knowledge Transfer Team would provide advice on cultivation techniques from land preparation to harvest. Activities were entirely pre-commercial and focused on upgrading production techniques. They consisted of:

- Technical demonstrations showcasing improved vegetable production practices
- Regular (short) training events covering a wide range of topics on vegetable production
- A core group of farmers in each village will participate in a series of (short) practical trainings which will follow the complete growing season of crops on each demonstration farm
- Field days on each successful demonstration to disseminate technical, financial and marketing information

Table 1 shows an overview of the different knowledge transfer activities and the targets connected to the pilot project (note: this both include the tomato pilot and the onion pilot).

TABLE 1: KNOWLEDGE TRANSFER ACTIVITIES AND TARGETS FOR THE 2017-18 SEASON IN MAGWAY

	Targets for 2017-18 season	
Demonstrations	4 EWS Advisors with each 16 key farmers and a total of 64 onion demonstrations	64 key farmers in Magway district
Training events	3 training events per demonstration	640 onion farmers trained
Field days	Minimum one field day per village	500 additional onion growers informed

2 Results

2.1 Number of participating farmers (male / female)

In Magway, a total of 95 training events were provided for the smallholder vegetable farmers with an interest in onions. The trainings covered topics such as effective nursery management, use of fertilizers, transplanting, soil and crop nutrient management and integrated pest management. Table 2 shows the number of training events, field days and the number and gender of participants.

TABLE 2: NUMBER OF TRAININGS, FIELD DAYS AND ATTENDING PARTICIPANTS PER DISTRICT

Township	No of training	No of field days	Total Farmers	Male	Female	Average trainees per training
Pakokku	14	7	443	421	22	21
Salin	12	2	255	183	72	18
Pwint Phyu	21	8	604	566	38	21
Seik Phyu	20	11	419	308	111	14
Total	95	28	1721	1478	243	

¹ Can be downloaded from: <http://www.dutchvegsupportmyanmar.com/onions/>

During the field days, both farmers and wholesale traders were invited to learn together about the benefits of the improved variety, improved cultivation practices and the quality of the cultivated onion. Several questions were raised by the participants, mostly about the experiences of demo-farmers and improved farming practices, which gave rise to lively discussions.

2.2 Number of onion demo farms in Magway

A total of 21 onion demo farms were established in the Magway region. Shwe La Woon 406 cultivar was tested in 18 demo farms and other (control) varieties were used in the remaining 3 farms (see Table 3). Out of 21 demo farms, on 3 farms the pilot was prematurely terminated due to heavy rains.

In the onion demo farms, the effects of an improved variety of onion seed and improved production practices (raised beds preparation, efficient irrigation, better plant spacing, use of plastic mulching, improved crop protection and balanced fertilisation) were compared to conventional practices and traditional varieties.

Extension staff of EWS's Knowledge Transfer team was assigned for each township. The staff took care of establishing the demonstration plots together with the farmers and provided technical assistance not only on onions but also for solving technical problems of other vegetable crops.

TABLE 3: ONION CULTIVARS IN THE 10 DEMO-FARMS IN THE PROJECT'S FIRST YEAR

Sr.	Crop	Cultivar	No of Demo farms
1	Onion	Shwe La Woon 406	18
2	Onion	Other	3
Total			21

2.3 Yield and net income in farmers' fields

The first results of onion demo- fields showed positive and the average yield of demo- fields and conventional fields are different.

TABLE 4: AVERAGE, MINIMUM AND MAXIMUM SOWN AREA AND YIELD OF ONION IN 4 TOWNSHIPS.

		Sown area (ac)	Production in the area (viss)	Yield (viss/acre)	
				viss/acre	MT/ha
Demo Farmers	Average	0.12	213	2197	8.86
	Minimum	0.08	20	740	2.99
	Maximum	0.25	420	4200	16.94
Conventional farmers	Average	0.69	1378	1856.67	5.59
	Minimum	0.4	120	240.00	0.48
	Maximum	1.5	3000	3200.00	12.10

Yields of farmers at demo- farms and conventional farmers are compared in Table 4. The average yield of onion demo farms was 2072 viss/acre (1 viss equals 1.625 kilograms). The average yield appeared higher in demo farms.

2.4 Marketing

As mentioned above, some onion fields were destroyed, with negative consequences on yield and hence onion supply. However, in some townships in Monywa, Sagaing, and Mandalay regions, farmers experienced an increase in income related to their onion production, as the regional price of onion was very high. Moreover, thanks to the use of fertilizers and better spacing with damaged plants, the size of harvested onions appeared much bigger compared to previous years. In this regard, the total supply (in kg's) of onion was not reduced and the price increased up to 400- 500 kyat/ viss at the time of harvest. International market price of onion was lower than the domestic price. Therefore, the exporters were unable to export much this year.

Farmers sold only a small part of their harvested onions for their necessary cash influx. Most of the crops harvested, however, are kept for better prices. The average price received by the demo farmers was 962 kyat per viss in the range of 500 to 1500 kyat per viss. The average price of onion received by non-demo farmers was 850 kyat per viss in the range of 700 to 1000 kyat/viss.



2.5 Benefits for onion farmers

Yield, cost and income data of the onion demonstration farms are summarized in Table 5. Gross profit of demo farmers were calculated according to the database of EWS's KT App.

TABLE 5: GROSS PROFIT OF DEMO FARMERS

		PRICE (KYAT/VISS)	YIELD (VISS/AC)	COST OF PRODUCTION (KYAT/AC)	TOTAL REVENUE (KYAT/AC)	GROSS PROFIT (KYAT/AC)
DEMO FARMERS	AVERAGE	962	2,196	584,886	1,915,219	1,330,333
	MINIMUM	500	740	131,250	600,000	303,500
	MAXIMUM	1,500	4,200	1,098,000	3,100,000	2,514,000
CONVENTIONAL FARMERS	AVERAGE	850	1,857	511,667	1,507,500	1,282,500
	MINIMUM	700	240	100,000	775,000	650,000
	MAXIMUM	1,000	3,200	1,200,000	2,240,000	1,915,000

The average yield, price and related total revenue was not significantly higher for demo-farmers when compared to the conventional farmers. This could be due to the different size of the farms: for the economic scale of onion farming, about 0.1 acre of demo-farms is relatively small. Cost of production is lower in conventional farming. In this regard, cost versus benefit ratio was higher in conventional farms.

Onion production is not new in Magway region, especially not in Pakokku, Seik Phyu and Salin townships. However, the farmers in Pwint Phyu Township have only grown onions in this pilot project. Their yield and income was not much different from the conventional farmers. This may be attributed to adverse weather during the season, as there were several unusual rains in November, December, and January. Farmers did not fully adopt the recommended practices of EWS.

2.5 Plans for the next season

The main demonstration season onions will start in the winter period. The planned demonstrations are summarised below.

TABLE 6: PLANNED ONION DEMONSTRATIONS IN THE MAGWAY TOWNSHIPS (2018-19)

No	Township	No of demos (June to September) Rainy season	No of demos (October to January) Winter season
		Onion (Shwe Lawoon)	Onion (Shwe Lawoon)
1	Pakokku	2	8
2	Seik Phyu	2	8
3	Salin	2	8
4	Pwint Phyu	2	8
	Total	8	32