

POTATO YIELD EXPERIMENT IN TRIPOLI

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INTRODUCTION

The history of growing potatoes (*Solanum tuberosum*) in Tripoli area goes back to the times of the Romans. Potatoes were exported from the port of Tripoli to Europe and other parts of the World. Several cultivars were planted; however, no reliable record or the performance of these cultivars is available. Sagier (1961) (unpublished) described the growing of potatoes in Tripolitania. Two main crops are grown The summer or spring crop is usually planted during the period from the middle of September and the middle of October. Local seed tubers are used for the winter crop. The possibility of the occurrence of frost in December or January may cause failure of the crop. A minor crop is grown in June in the place of the watermelon. Local seed tubers are used.

The objective of this experiment is to evaluate the field performance of several dutch potato cultivars planted at different dates in an attempt to extend the season of production.

MATERIALS AND METHODS

Sixteen dutch potato cultivars were tested in a randomized block design experiment in the sandy loam soil of the farm of the Faculty of Agriculture in Tripoli. Using the same stock of seed tubers, three plantings at three different dates, namely 20-12-1970, 22-1-1971 and 4-3-1971, were made. The seed tubers were provided by the Institute for Research on Varieties of Field crops, Wageningen, Holland. Seed tubers were received in Tripoli on 18-12-1970. Whole tubers were planted in rows 75 apart and spaced at 20 cms in the row. Seed rate was approximately three tons per hectare. Sprinkler irrigation was used in addition to the rain. (Rainfall data during the growing period is given in table 2). The crop received a complete fertilizer 12-24-12 at the rate of 400 Kg per hectare.

The first and second sowing date crops were harvested in the middle of May. The crop from the third sowing date was harvested on 6-6-71. Haulms and tubers were lifted in one operation. Counts of the plants infected with early blight were made.

RESULTS AND DISCUSSION

Marketable tuber yields are given in Table 1. Yields in tons per hectare of each cultivar may be computed by multiplying each corresponding figure by the factor 2. For all cultivars except four, yields obtained from the third sowing date were highest. This increase in yield is due to the prevailing warmer temperature, increasing day length, healthier plants and larger size of sprouts at planting. All cultivars planted in the third sowing date were ready for harvest after about three months from planting with marked uniformity in tuber size.

Planting tubers in late December (First Sowing date) delayed emergence for about a month although the sprouts in most of the cultivars were already visible. Emergence in the second sowing date was quick. Sprouts were already larger than at the time of the first sowing date. Patrones, Alpha and Desiree were the least sprouting at the time of the second sowing date.

Tubers from the first and second sowing dates were harvested respectively after 145 and 115 days from planting. In both plantings Alpha was a later cultivar. Delay in harvest in the first sowing date is largely due to delay in emergence. There are no marked differences in yields of cultivars obtained from the first and second sowing dates. There are however significant difference between cultivars in each sowing date. Radosa gave the highest yield in the first sowing date and

lower yields in both the second and third sowing dates. Resy gave the highest yield in the second sowing date, still a high yield in the third sowing date but a low yield in the first sowing date. Spunta gave the highest yield in the third sowing date followed by Mary jice.

Early blight was marked in most of the cultivars planted in the first and second sowing dates.

In these plantings cultivars with the least infection were Radosa, Patrones, Resy and Alpha. Spunta and Sientje were the most infected. Infection in the third sowing date was minimal in all cultivars.

SUMMARY

- 1 - Yields of the majority of the cultivars were highest from the third sowing date (4-3-71).
- 2 - Radosa gave the highest yield in the first sowing date. It was one of the cultivars least infected with early blight in the first and second sowing dates.
- 3 - Resy gave the highest yield in the second sowing date. It was also one of the cultivars least infected with early blight in the first and the second sowing dates.
- 4 - Spunta gave the highest yield in the third sowing date followed by Mary jice and Resy.
- 5 - Early blight was minimal in the third sowing date.

Table 1. Yields of 16 Dutch Potato cultivars grown at three sowing dates in Tripoli 1970 / 1971.

Cultivar	Sowing date (1) 20-12-70	Sowing date (2) 23-1-71	Sowing date (3) 4-3-71
1 Alpha	11.3	8.6	18.6
2 Arka	15.6	15.0	17.3
3 Avenir	10.3	12.0	13.3
4 Bintje	16.0	11.1	15.3
5 Desiree	12.6	11.6	17.0
6 Jaerla	14.8	19.3	18.0
7 Mary jice	11.6	12.0	20.0
8 Mirka	13.3	14.0	17.6
9 Ostara	12.8	14.0	14.3
10 Patrones	17.0	12.3	15.0
11 Radosa	20.0	14.0	14.3
12 Resy	10.5	21.3	19.0
13 Sientje	10.6	13.3	16.6
14 Spartan	15.3	9.3	16.0
15 Spunta	14.3	15.6	21.0
16 Wilja	12.3	15.0	12.3
LSD 5 %	4.3	5.6	2.1

Table 2. Mean monthly daylength (Hr.) and mean monthly rainfall (mm) Tripoli at 34° North, 1970-71.

	J	F	M	A	M	J	J	A	S	O	N	D
Daylength	10.1	11.0	12.0	13.0	13.5	14.5	14.1	13.2	12.6	11.2	10.7	10.0
Rainfall	56.5	69.5	29.7	TR	4.2	0.0	0.0	—	—	—	0	10.8

Table 3. Monthly mean maximum and mean minimum temperatures °C- Tripoli, 1970-71.

	J	F	M	A	M	J	J	A	S	O	N	D
Mean Max.	18.7	17.0	21.9	27.5	25.3	31.9	31.8	—	—	—	23.8	20.7
Mean Min.	4.7	6.0	7.5	12.1	13.9	16.1	16.7	—	—	—	8.4	6.5