ABSTRACT

Studying covering types and hydrogen cyanamide treatments in Flame Seedless grapevines as well as storing Ruby Seedless grape bunches at 0°C and 60–70%, relative humidity (RH) after pre-harvest treatments with defoliation, calcium chloride, biological control, growth regulators. The following results and packing it different packing types showed that.

Vines covered with high tunnel of clear copolymer polyethylene with or without covering soil surface by clear polyethylene sheets gave the highest values of earliness for budburst and budburst percentage. These treatments recorded the earliest harvest date. They gave also the highest volume and weight of juice extracted from 100 berries as well as the highest TSS% and pH values. Application of Dormex resulted in increasing shoot length, the number of leaves / shoot and budburst percentage compared with the control. Untreated vines (water sprayed) gave the highest yield / vine, cluster weight, shoot length, pruning weight and leaf area. From the economic view, the highest additional costs, total return and gross margin / fed. were obtained from vines covered with high tunnel clear copolymer polyethylene and covered soil surface by clear polyethylene sheets.

As for the effect of pre-harvest treatments on Ruby Seedless grapevines. Defoliation treatments gave the longest storage life, and recorded relatively low fresh weight losses (FWL) %, decay % and shattering % and gave higher berries firmness and attaching force as compared with the control. Moreover, defoliation treatments resulted in a longer shelf life.

The obtained results revealed the advantage of packing, Ruby Seedless clusters in perforated (0.50 or 0.25% of area) polyethylene (PE) bags + SO_2 generators. The two packing treatments recorded relatively. Low FWL (%), decay %, berries shattering % and higher berries firmness and attaching force as compared with the control. Packing in sealed PE increased berries firmness and attaching force and decreased panel test index value during the first three months of cold storage. Clusters packed in perforated PE had longer shelf life than all tested treatments.

Conclusively, using covering type by clear copolymer polyethylene high tunnel and covered soil surface by clear polyethylene sheets gave the highest values of earliness for budburst (2 months) and recorded the highest values of earliness of harvest date (2 months) as well as the highest clusters and berries characteristics in addition, the highest additional costs, total return and gross margin/fed. While, longer storage periods was obtained by (Def + PG2 + Ca2 + NAA) treatment for five months. Moreover, cluster packed in perforated (0.50% of bags area) PE bags contained SO_2 generators had longer storage life for 5 months and recorded relatively, lower FWL%, decay%, berries shattering and higher berries firmness and attaching force.

CONTENTS

LIST OF ABBREVIATIONS

A.R.C.	Agriculture Research Center
AC	Additional cost per feddan
Apr.	April
av.	Average
BDP	Berries decay percentage
C.F.	Cited from
Ca 2	Spraying the clusters twice with $CaCl_2$ 2%
$CaCl_2$	Calcium chloride
Cal	Spraying the clusters only once with $CaCl_2$ 2%
CB	Carton boxes
CGM	Changes in gross margin
Cl_2	Chlorine gas
CO_2	Carbon dioxide
Conc.	Concentration
Cont.	Control
CPPU	Cytophex
CV.	Cultivar
d.	Day
Dec.	December
Def.	Defoliation
Dormex	Hydrogen cyanamide
EVA	Ethylvinyl acetate
F/ha	Franc / hectare
Feb.	February
FWL	Fresh weight loss
GA_3	Gibberellic acid (3)
GM	Gross margin per feddan
HDPE	High density polyethylene

ICA	Insecticidal controlled atmospheres
LDPE	Low density polyethylene
IR	Infrared
Mar.	March
NAA	Naphthalene acetic acid
Oct.	October
PE	Polyethylene
Perf.	Perforated
PG	Plant guard
pH	Activated acidity
ppm	Parts per million
RH	Relative humidity
SO_2 gener.	Sulfur dioxide generator
SSC	Soluble solids content
t/ha	ton/hectare
TR	Total return per feddan
Treat.	Treatment
TSS	Total soluble solids
UV.	Ultra violet
Vol/vol.	Volume / volume
wk	Week