

COMPREHENSIVE REPORT

Cultivar storage profiles of field tubers and dormancy in potato minitubers

February 28, 2001

2001 Annual Research Meeting of the SLV Research Center Committee

CONTENTS

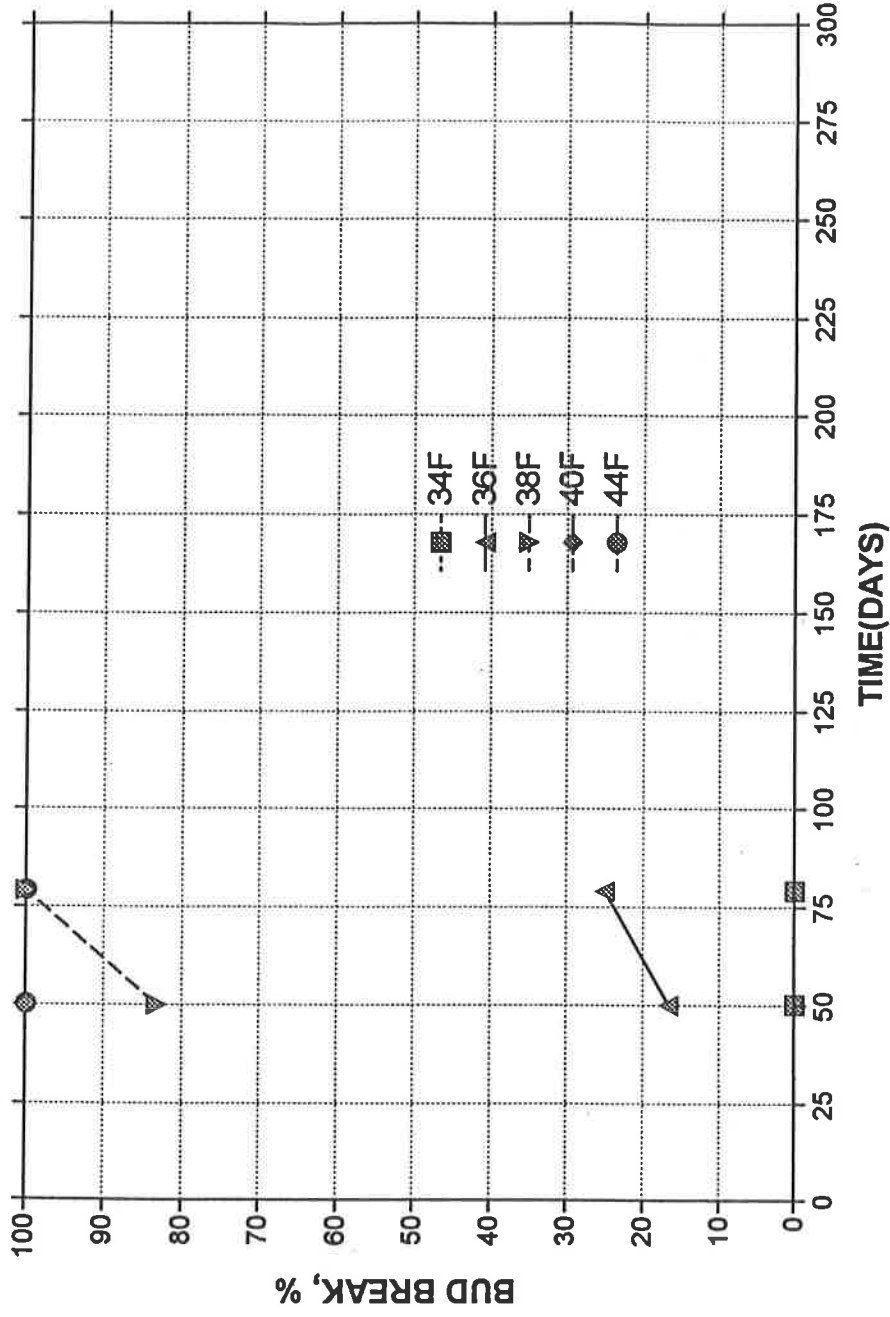
(A) Field tuber dormancy 2000 crop

1. Field tuber storage performance profiles for seven cultivars (7 figures)
2. Table 1. Days in storage to attain 10% bud break
Table 2. Days in storage to attain 50% bud break
3. Field tuber, 1999 fall harvest, dry weight (%) at conclusion of storage time

(B) Minituber dormancy

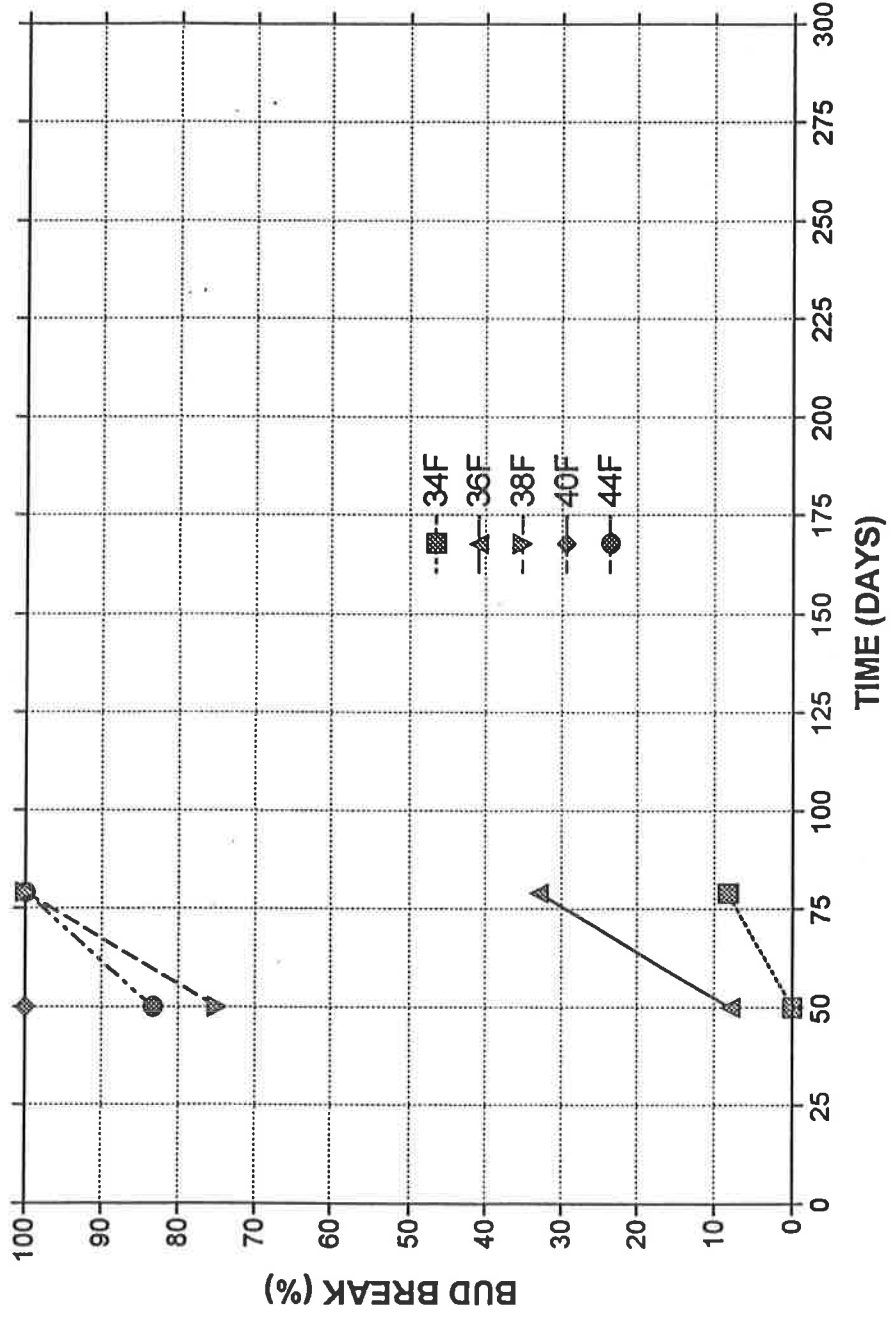
1. Minituber response to dormancy breaking compounds (RNK #3)
2. Field emergence from minitubers which had previously been treated with dormancy breaking compounds planted at the Fort Collins Horticultural Research Center May 2000
3. Table 3. Minituber long term storage study, percent of tubers which had visible sprouts. Incubator vs greenhouse after 390 days of storage @ 36F for Atlantic, Centennial, Chieftain, Kennebec, RNK#3 and RNK#8
4. Top dry weight for RNK#3 and RNK #8 minitubers grown in greenhouse for 45 days after storage @ 38F for 110 days or storage @36F for 390 days

CHERRY RED STORAGE CHARACTERISTIC



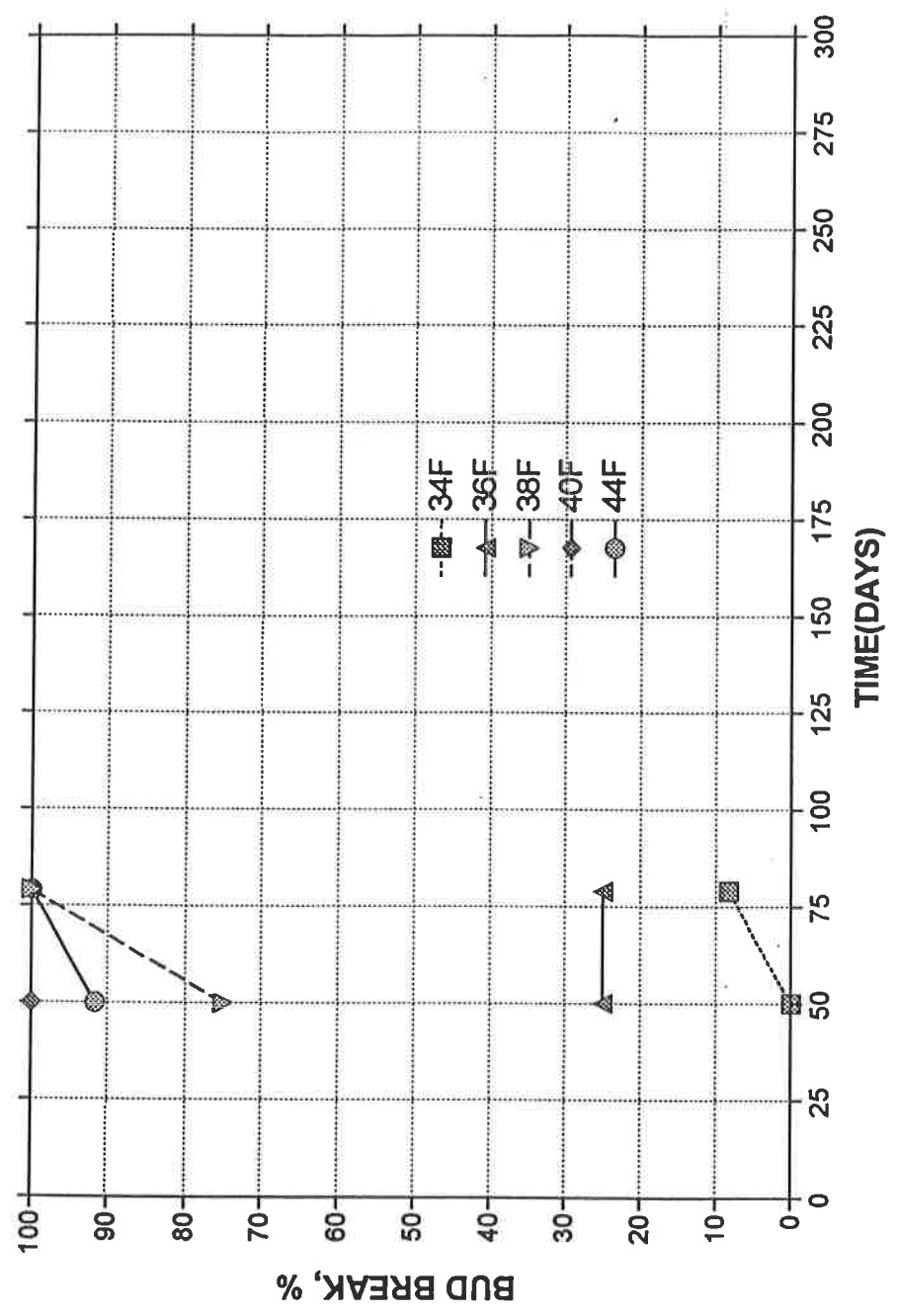
Field tuber storage performance profile for Cherry Red, 2000 fall harvest

CHIPETA STORAGE CHARACTERISTICS



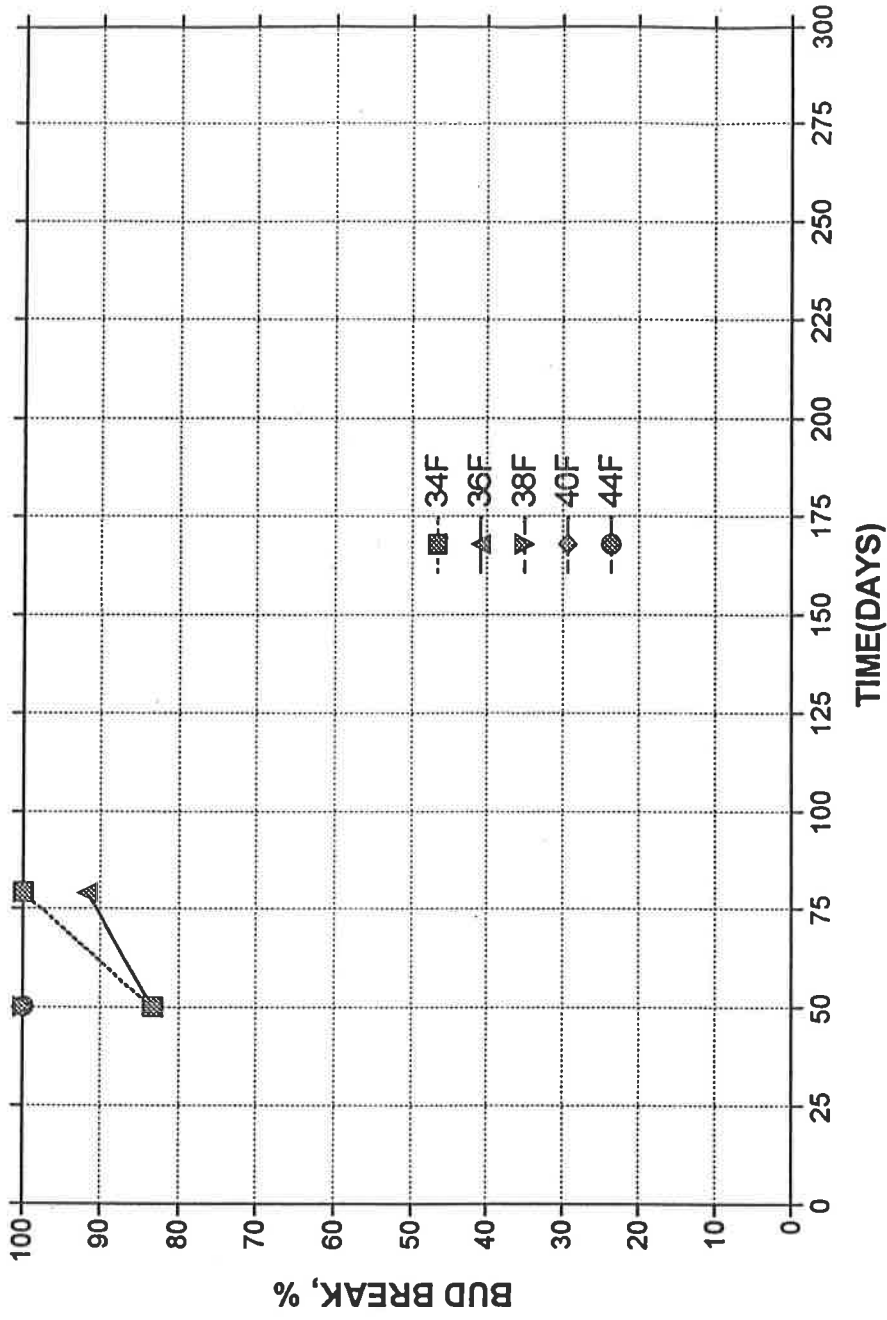
Field tuber storage performance profile for Chipeta, 2000 fall harvest

C086218-2 STORAGE CHARACTERISTICS



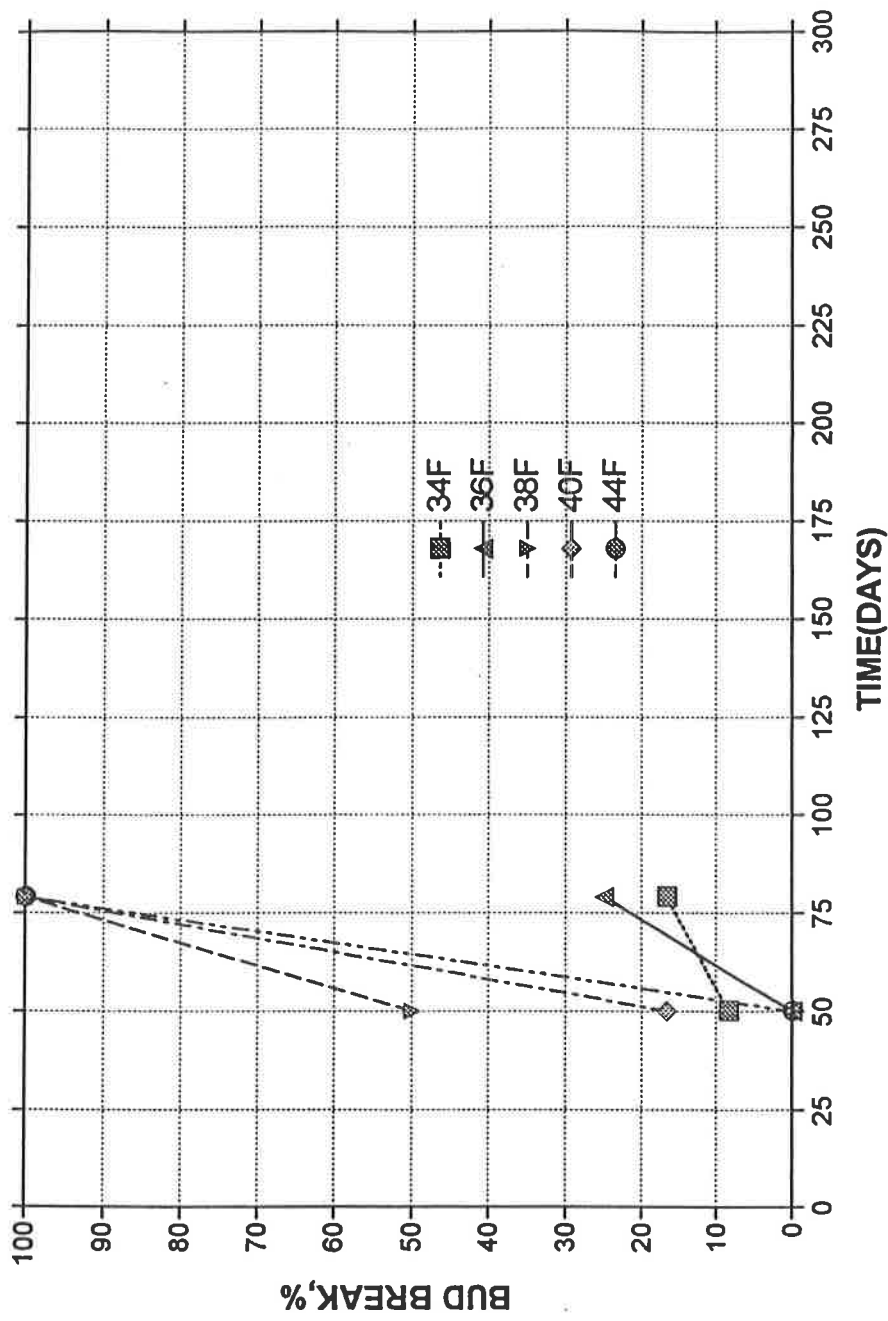
Field tuber performance profile for C086218-2 , 2000 fall harvest

KEYSTONE STORAGE CHARACTERISTICS



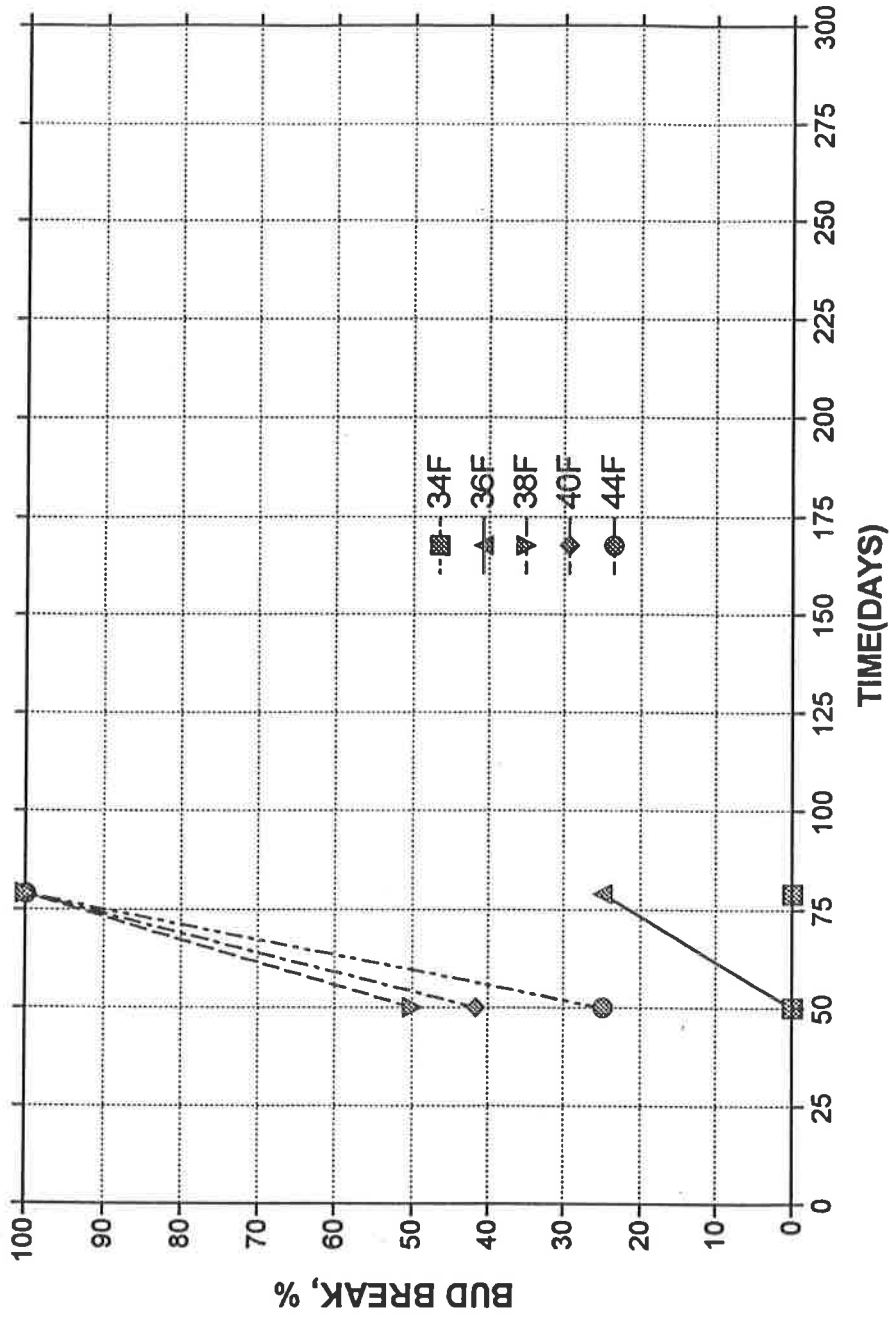
Field tuber performance profile for Keystone, 2000 fall harvest

RNK3 STORAGE CHARACTERISTICS



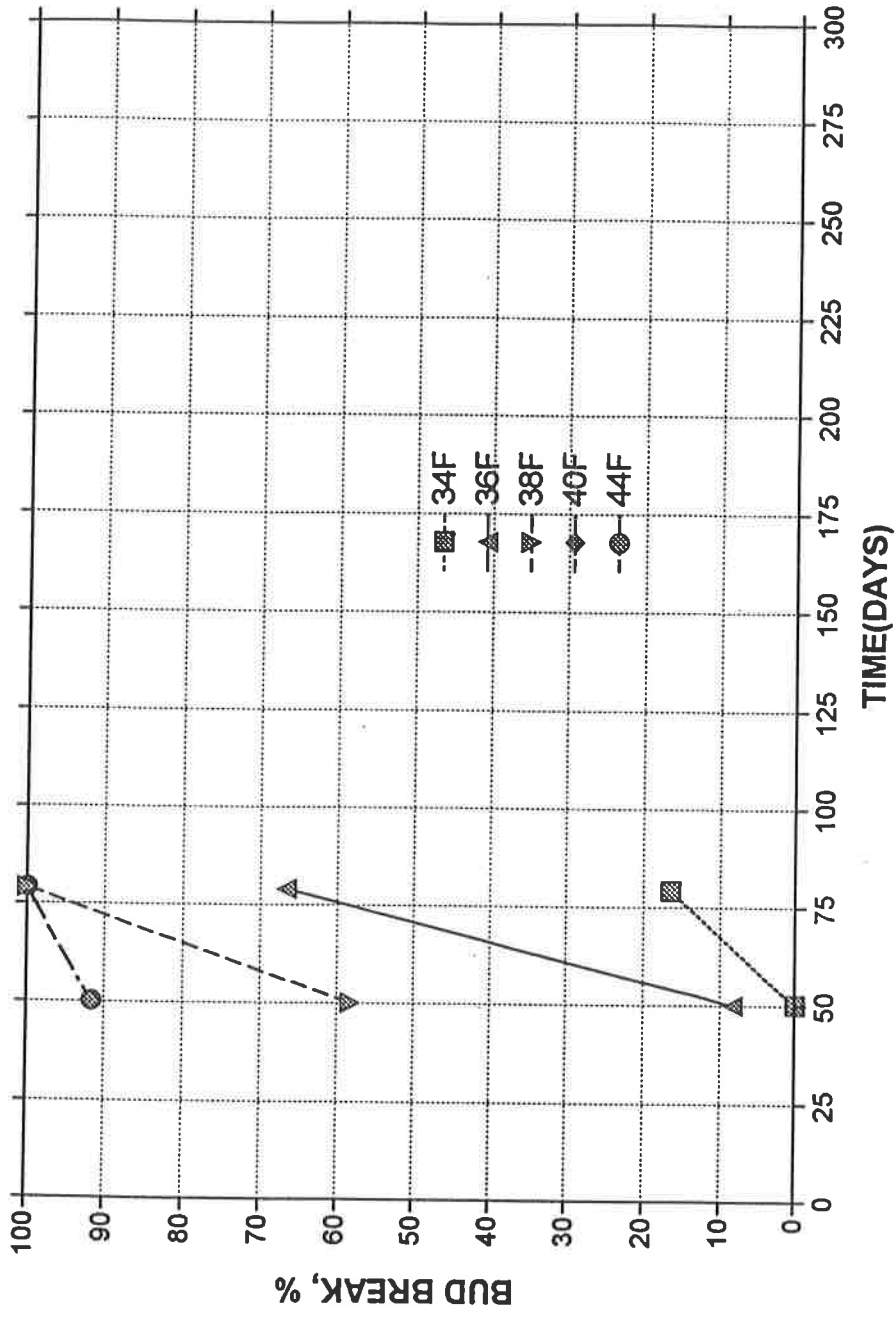
Field tuber performance profile for Russet Norkotah #3, 2000 fall harvest

RNK8 STORAGE CHARACTERISTICS



Field tuber performance profile for Russet Norkotah #8, 2000 fall harvest

R NUGGET STORAGE CHARACTERISTICS



Field tuber performance profile for Russet Nugget, 2000 fall harvest

Table 1. Days in storage to attain 10% tuber bud break for fall 2000 harvested field tubers.

<u>Variety</u>	<u>Storage Temperature (F)</u>				
	<u>44</u>	<u>40</u>	<u>38</u>	<u>36</u>	<u>34</u>
Cherry Red	<50	<50	<50	<50	>79
Chipeta	<50	<50	<50	55	90
C086218-2	<50	<50	<50	<50	85
Keystone	<50	<50	<50	<50	<50
R. Norkotah #3	52	<50	<50	65	60
R. Norkotah #8	<50	<50	<50	63	>79
R. Nugget	<50	<50	<50	52	70

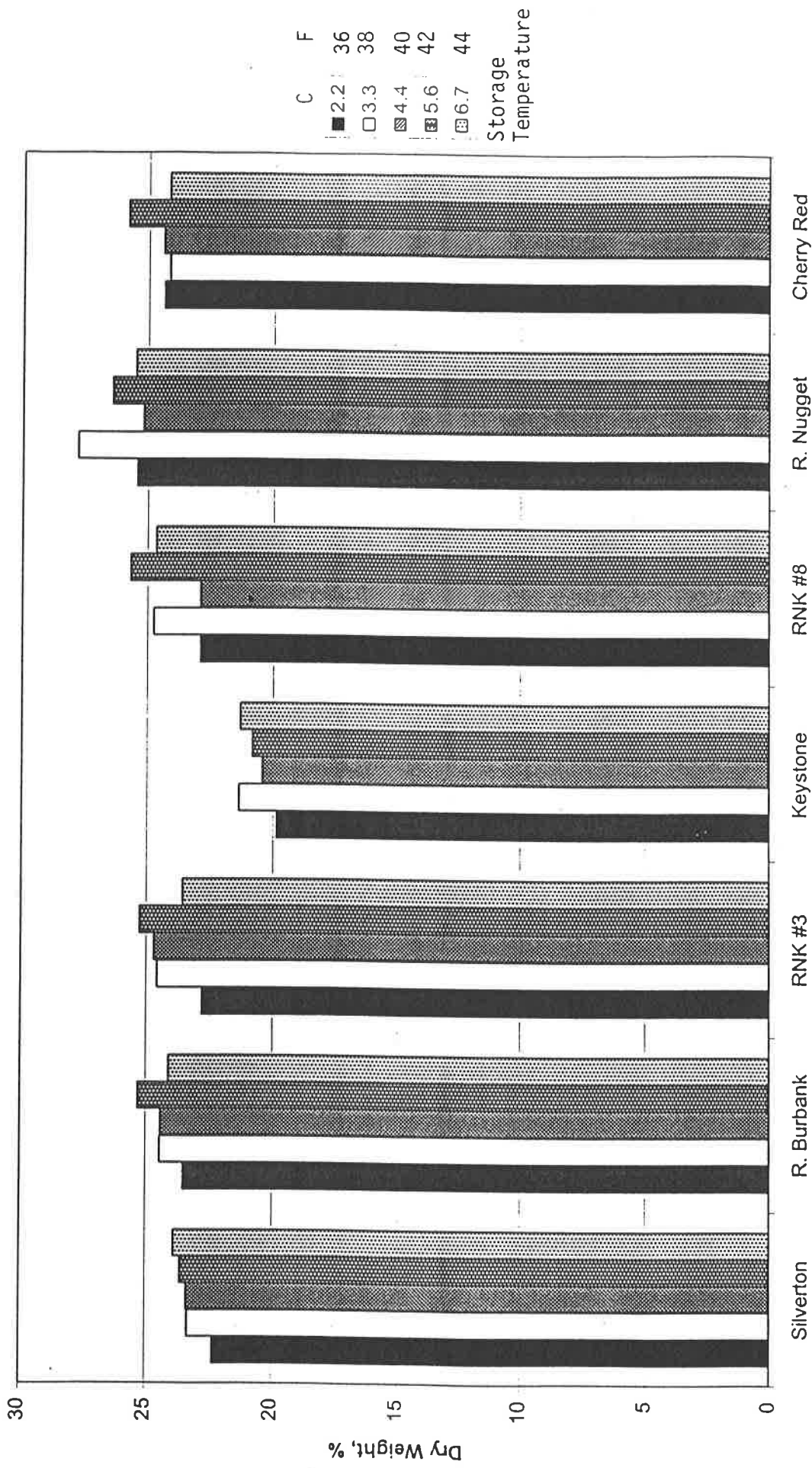
Table 2. Days in storage to attain 50% tuber bud break for fall 2000 harvested field tubers.

<u>Variety</u>	<u>Storage Temperature (F)</u>				
	<u>44</u>	<u>40</u>	<u>38</u>	<u>36</u>	<u>34</u>
Cherry Red	<50	<50	<50	>150*	>150
Chipeta	<50	<50	<50	100	>200
C086218-2	<50	<50	<50	>150	>200
Keystone	<50	<50	<50	<50	<50
R. Norkotah #3	68	65	50	>100	>200
R. Norkotah #8	60	55	50	>100**	>200
R. Nugget	<50	<50	<50	70	>100

* 1999 storage studies showed that 150 days were required for 50% tuber bud break

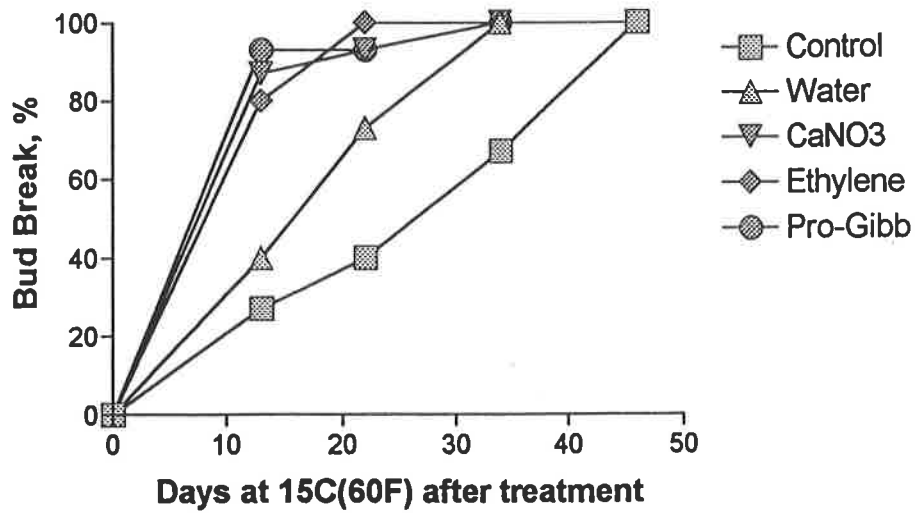
** 1999 storage studies showed that 130 days were required for 50% tuber bud break

Field Tuber Storage Dry Weight



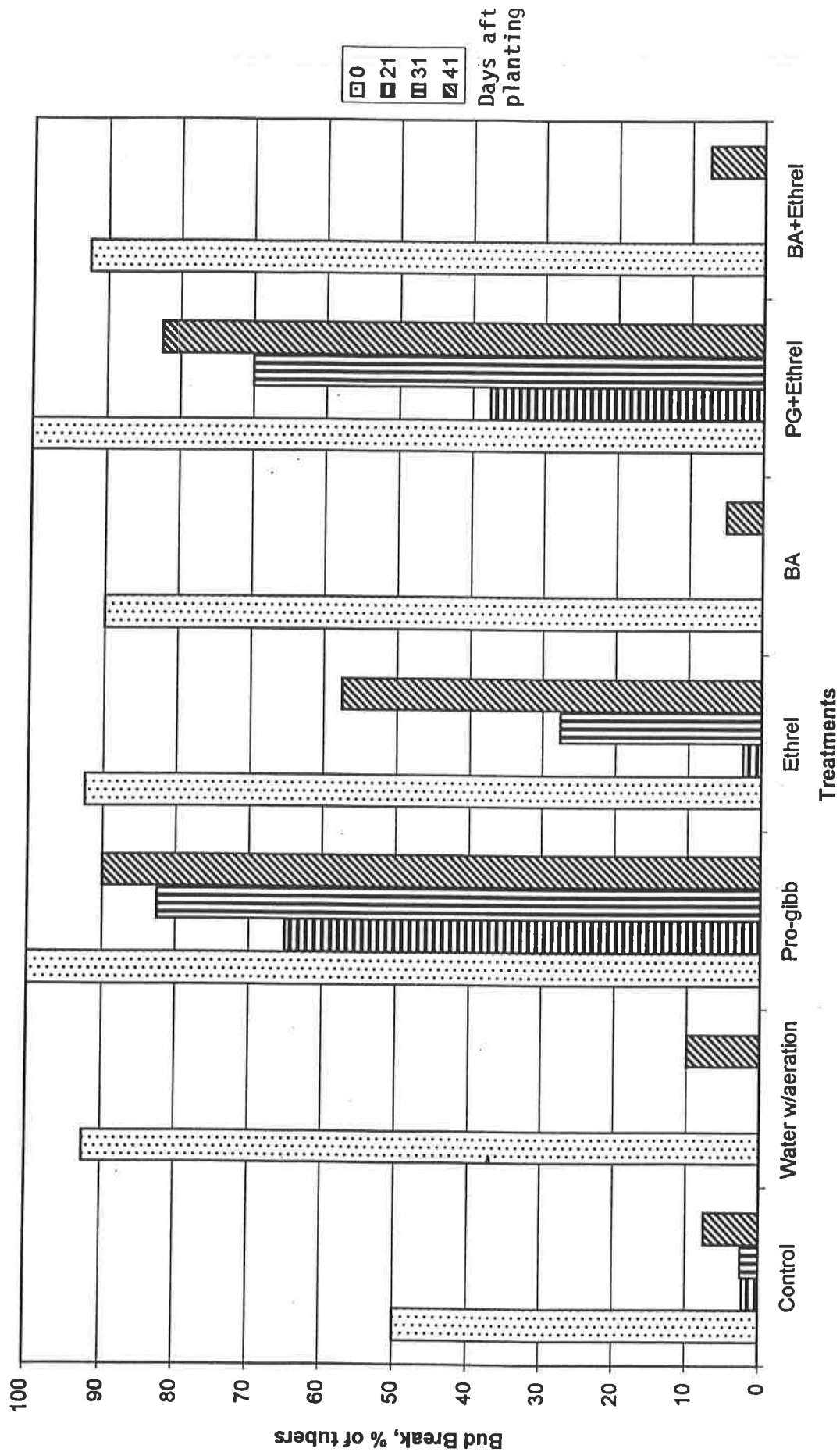
Field tuber, 1999 fall harvest, dry weight (%) at conclusion of storage time.

Minituber Dormancy, RNK #3



Minituber response to dormancy breaking compounds

Hort Farm Emergence

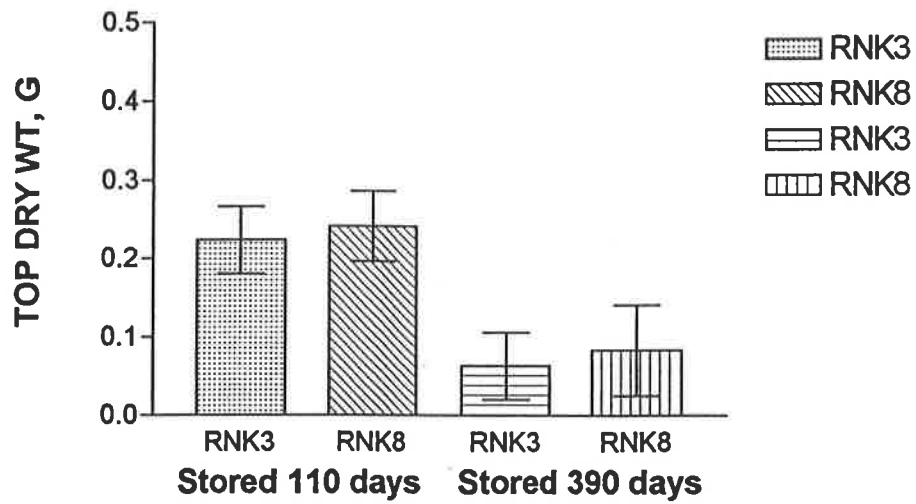


Field emergence from minitubers which had previously been treated with dormancy breaking compounds planted at Fort Collins Horticultural Research Center May 2000

Table 3. Minitubers long term storage study, percent of control tubers which had visible sprouts. Tubers were placed either in the incubator at 60F(15C) in the dark and held for 37 days or in the greenhouse in 4" pots in potting mix for 44 days. Tubers had been in storage for approximately 390 days at 36F in small paper bags within cardboard boxes.

<u>CULTIVAR</u>	<u>INCUBATOR</u>	<u>GREENHOUSE</u>
Atlantic	100	100
Centennial	80	80
Chieftain	100	60
Kennebec	100	100
RNK #3	100	80
RNK #8	100	80

Minitubers from Greenhouse December 2000



Minitubers grown in 4" pots in greenhouse for 45 days after being stored @ 38F for 110 days or @ 36F for 390 days