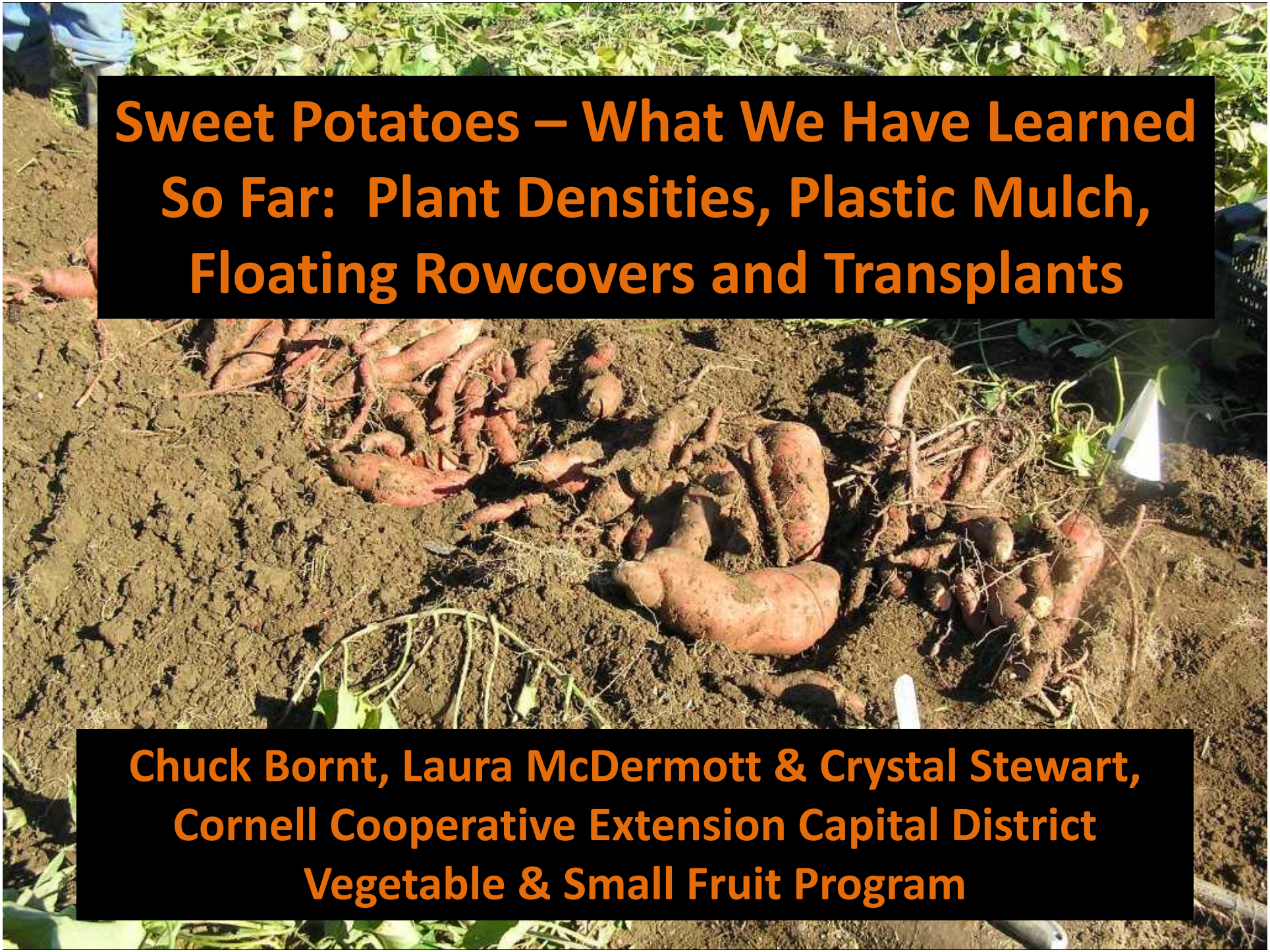

Sweet Potatoes – What We Have Learned So Far: Plant Densities, Plastic Mulch, Floating Rowcovers and Transplants

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Vegetable & Small Fruit Program

Trial Particulars

- This was a multiple trial planting: Thanks to our host Samascott Orchards. We looked at:
  - 2 different plastic mulches (black and IRT) and with or without floating rowcovers
  - 4 different planting densities/planting configurations with slips
  - Using “transplants” or plugs compared to traditional slips

IRT vs. Black Mulch With or Without Floating Rowcovers.

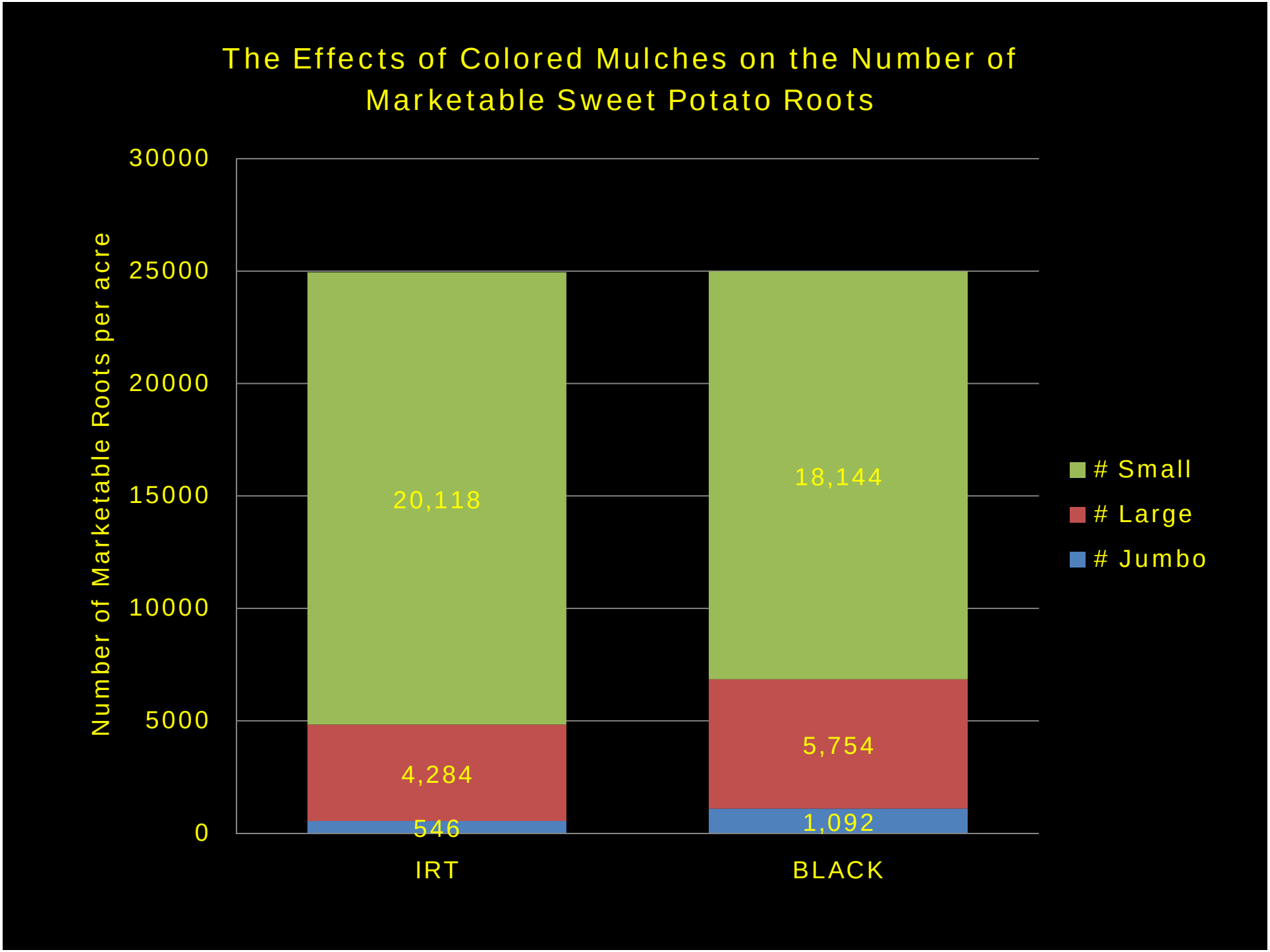
Variety = Covington

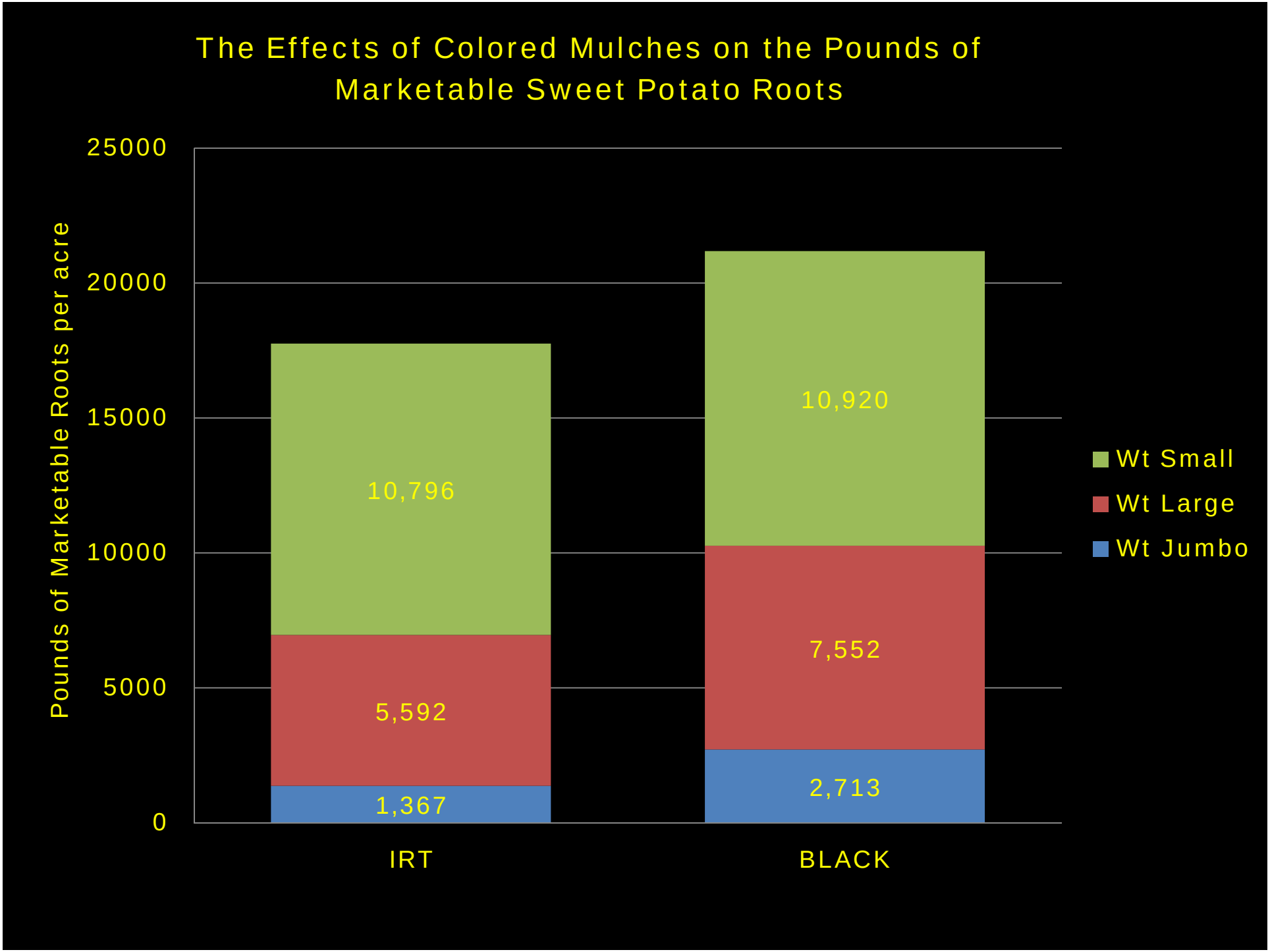
- All plants were planted into 4” raised beds mulched with black plastic or IRT (Infra-red transmitting) mulch on 6.5’ centers on June 10, 2011. A single row of slips at 15” apart was used for the in-row spacing.
- DuPont 5131 (Typar 518) was applied on June 11, 2011
- Harvested on October 20, 2011.

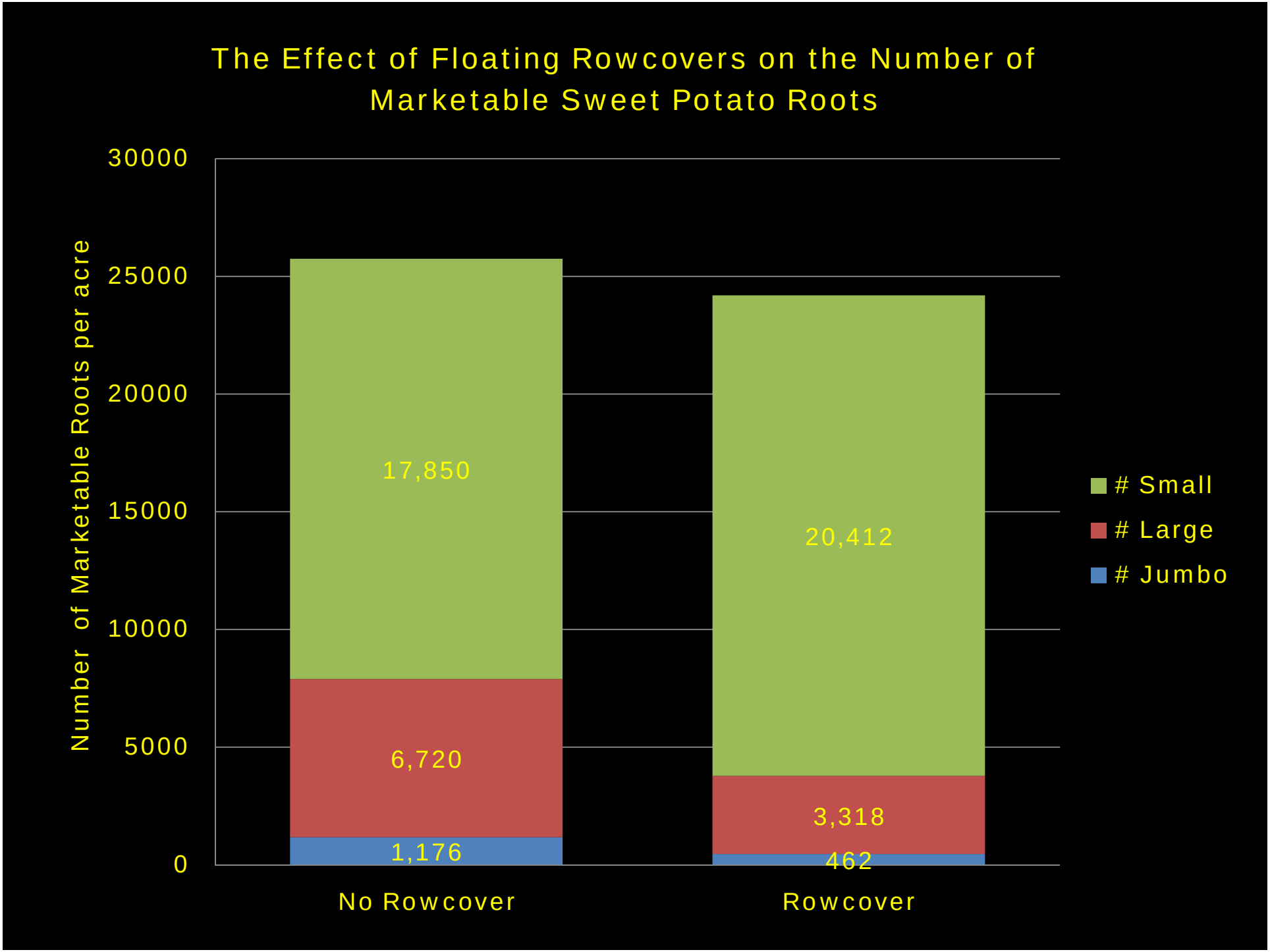

Row Cover

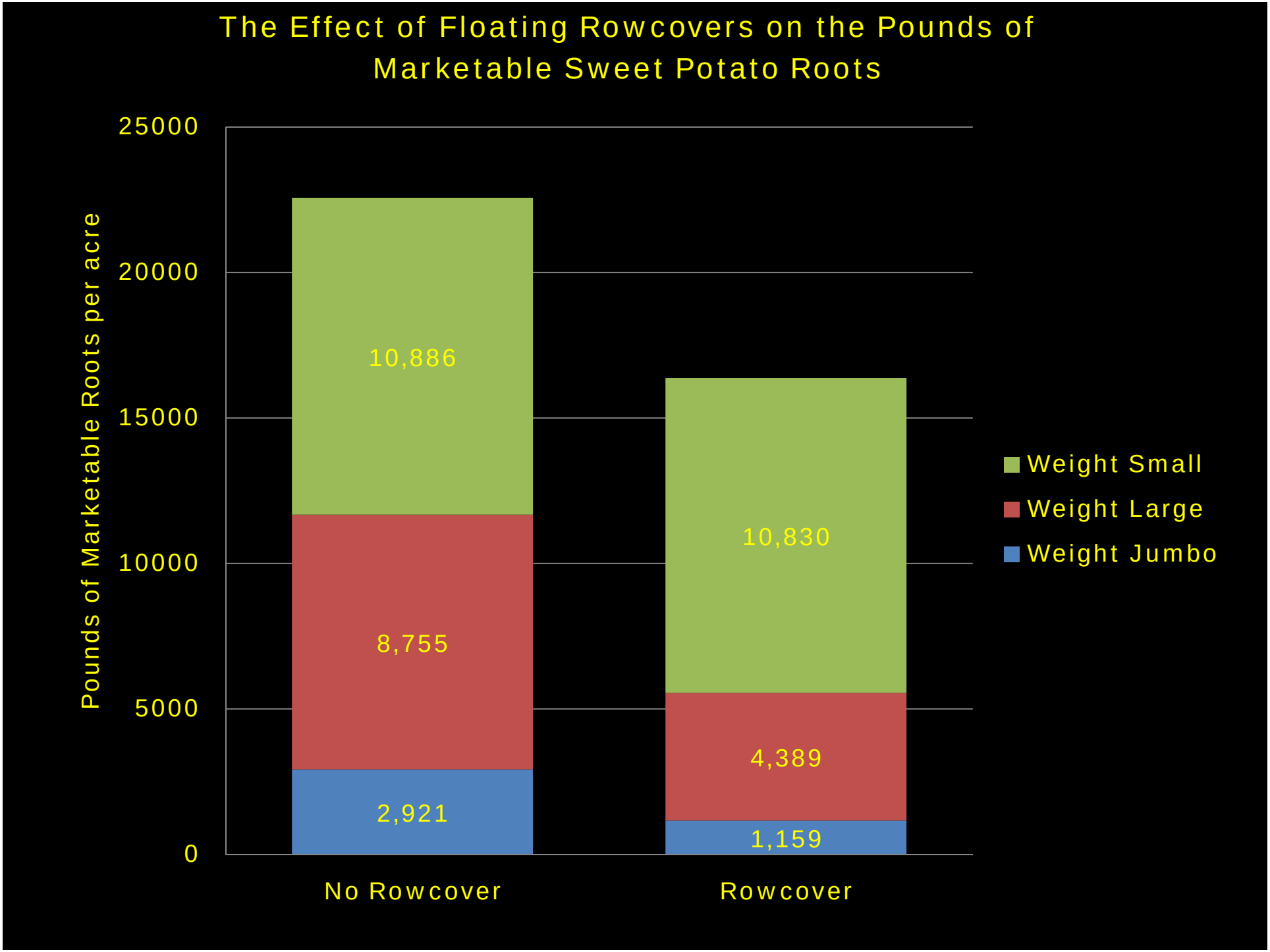

NO Rowcover

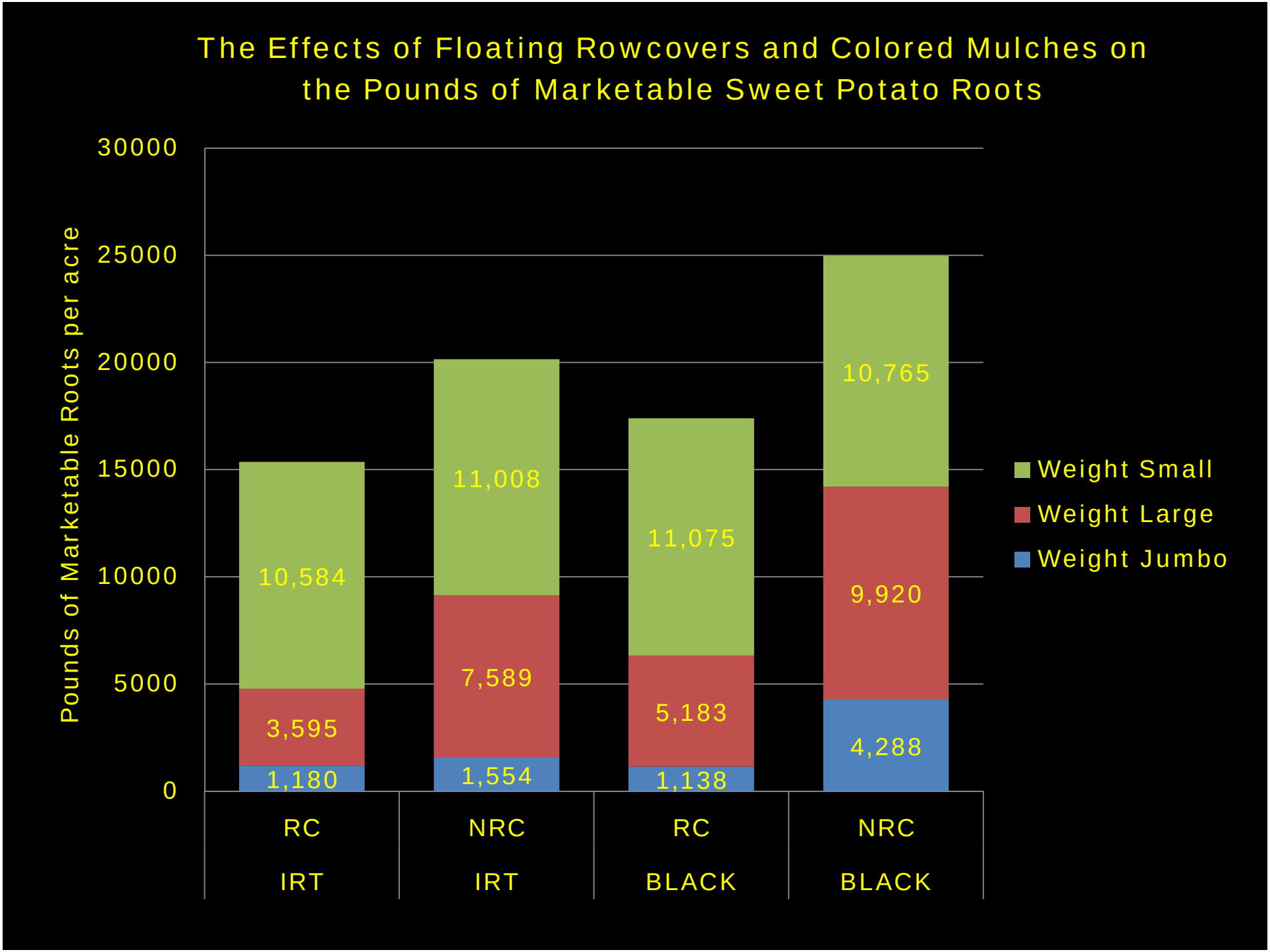

Jumbo Roots –
2lbs +
Large Roots –
1 – 2 lbs
Culls - less then 0.25 lbs or
less then 1.5” in diameter
Small Roots –
0.25 – 1.0 lbs
Beauregard
Rep1

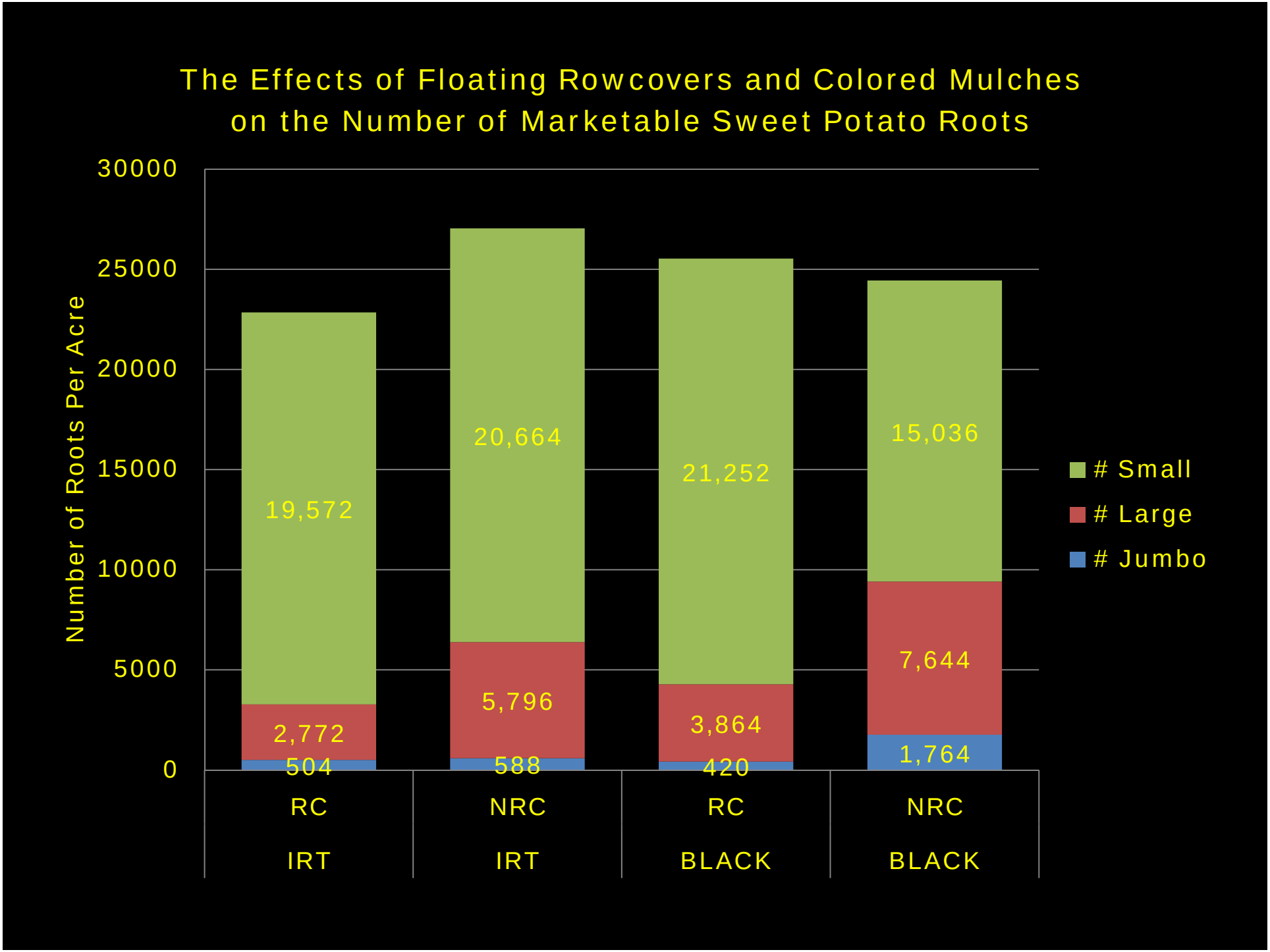

The Effects of Colored Mulches on the Number of Marketable Sweet Potato Roots
Number of Marketable Roots per acre
30000
25000
20000
15000
10000
5000
0
20,118
4,284
546
18,144
5,754
1,092
IRT
BLACK
Small
Large
Jumbo


The Effects of Colored Mulches on the Pounds of Marketable Sweet Potato Roots
Pounds of Marketable Roots per acre
25000
20000
15000
10000
5000
0
10,796
5,592
1,367
10,920
7,552
2,713
IRT
BLACK
Wt Small
Wt Large
Wt Jumbo


The Effect of Floating Rowcovers on the Number of Marketable Sweet Potato Roots
Number of Marketable Roots per acre
30000
25000
20000
15000
10000
5000
0
17,850
6,720
1,176
20,412
3,318
462
No Rowcover
Rowcover
Small
Large
Jumbo


The Effect of Floating Rowcovers on the Pounds of Marketable Sweet Potato Roots
Pounds of Marketable Roots per acre
25000
20000
15000
10000
5000
0
10,886
8,755
2,921
10,830
4,389
1,159
No Rowcover
Rowcover
Weight Small
Weight Large
Weight Jumbo


The Effects of Floating Rowcovers and Colored Mulches on the Pounds of Marketable Sweet Potato Roots
Pounds of Marketable Roots per acre
30000
25000
20000
15000
10000
5000
0
10,584
3,595
1,180
11,008
7,589
1,554
11,075
5,183
1,138
10,765
9,920
4,288
RC IRT
NRC IRT
RC BLACK
NRC BLACK
Weight Small
Weight Large
Weight Jumbo


The Effects of Floating Rowcovers and Colored Mulches on the Number of Marketable Sweet Potato Roots
Number of Roots Per Acre
30000
25000
20000
15000
10000
5000
0
19,572
2,772
504
20,664
5,796
588
21,252
3,864
420
15,036
7,644
1,764
RC IRT
NRC IRT
RC BLACK
NRC BLACK
Small
Large
Jumbo

Planting Density Trial

Variety = Covington

Densities compared:

- Single row (1X) at 12” apart
- Double staggered row (2x) at 12” apart
- Single Row 6” apart
- Double Staggered row 18” apart

All plants were planted into 4” raised beds mulched with black plastic on 6.5’ centers on June 7, 2011. Harvested on October 20, 2011.

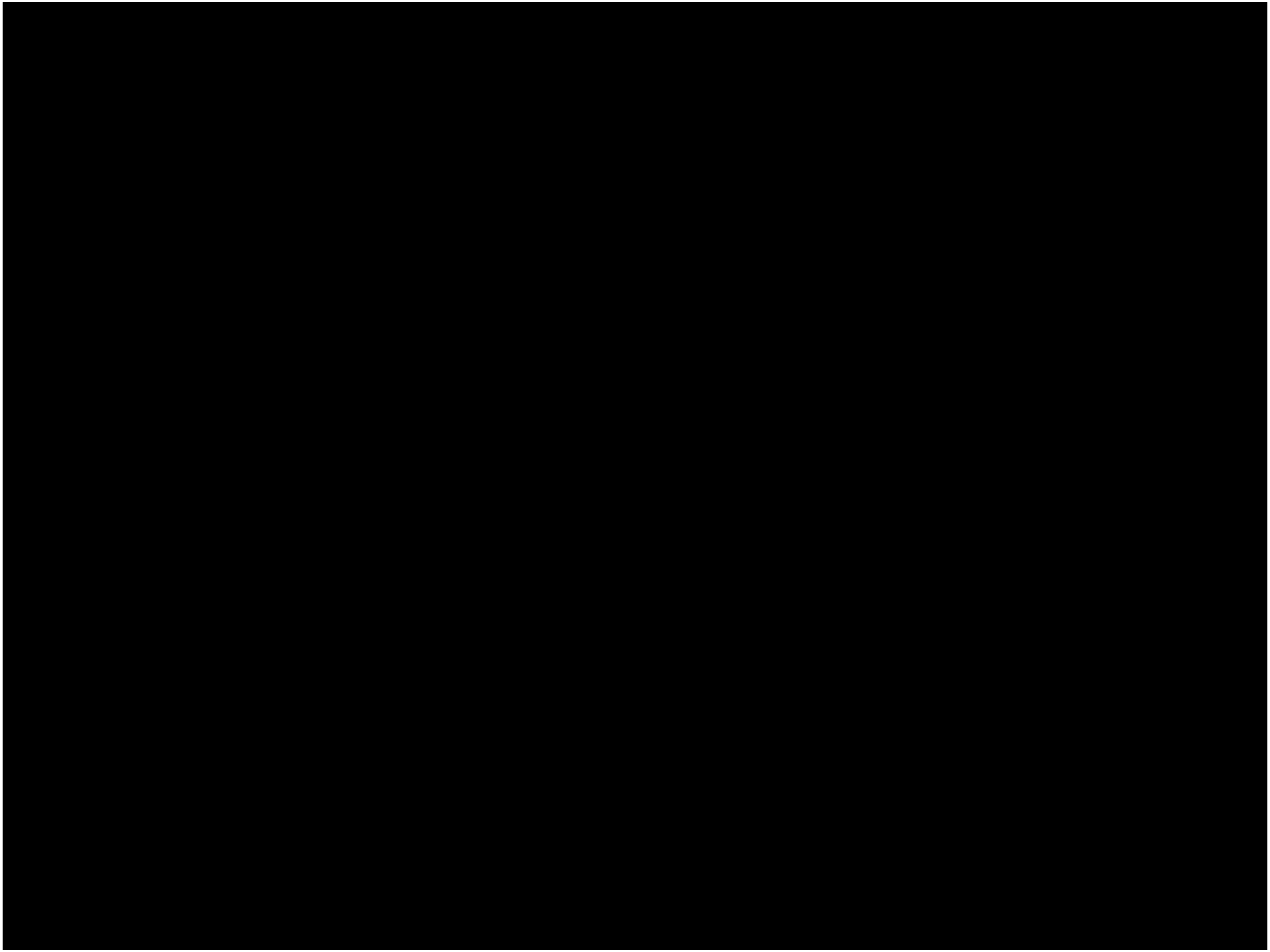
Double row, 18” apart

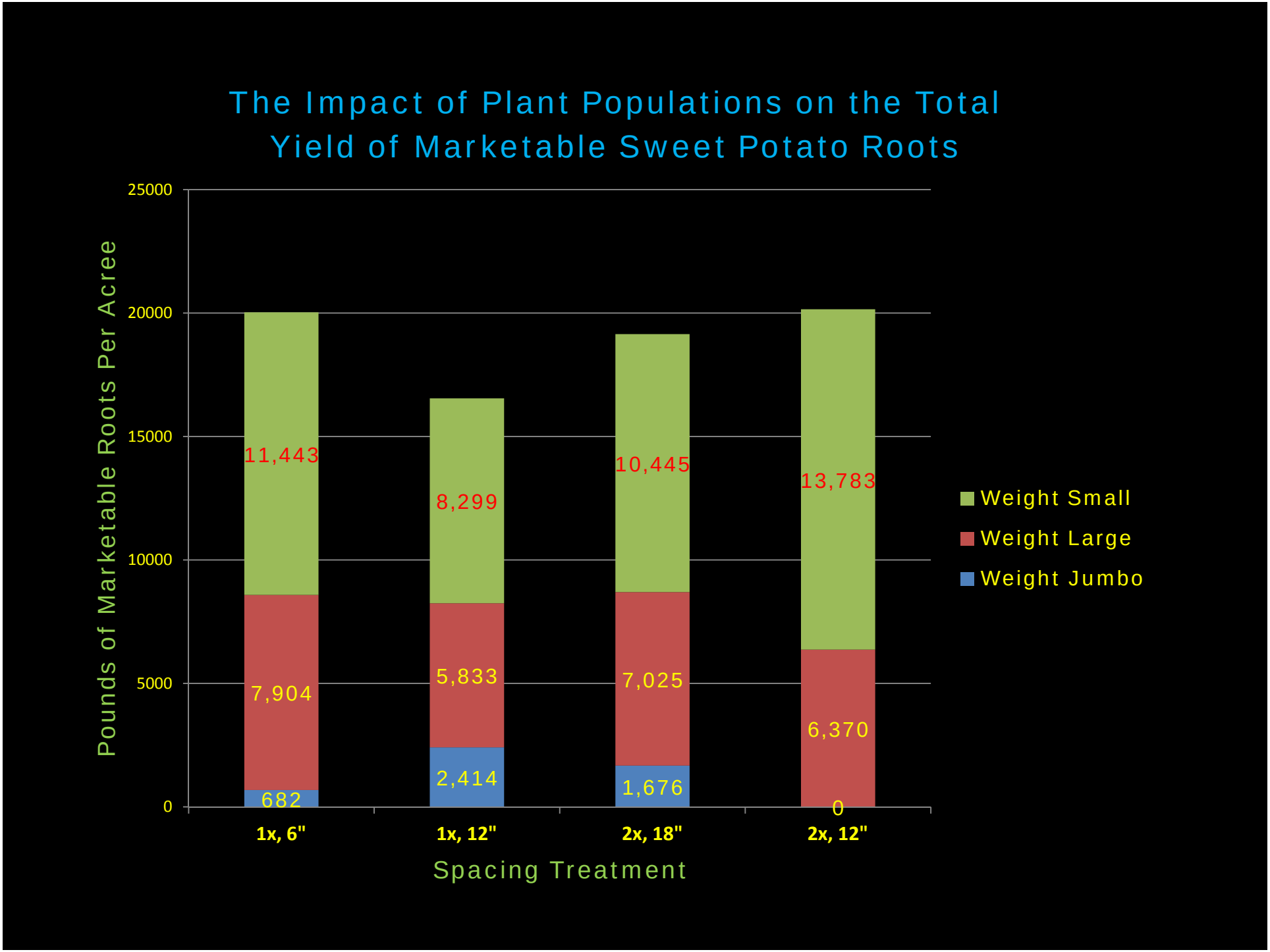
Double row, 12” apart

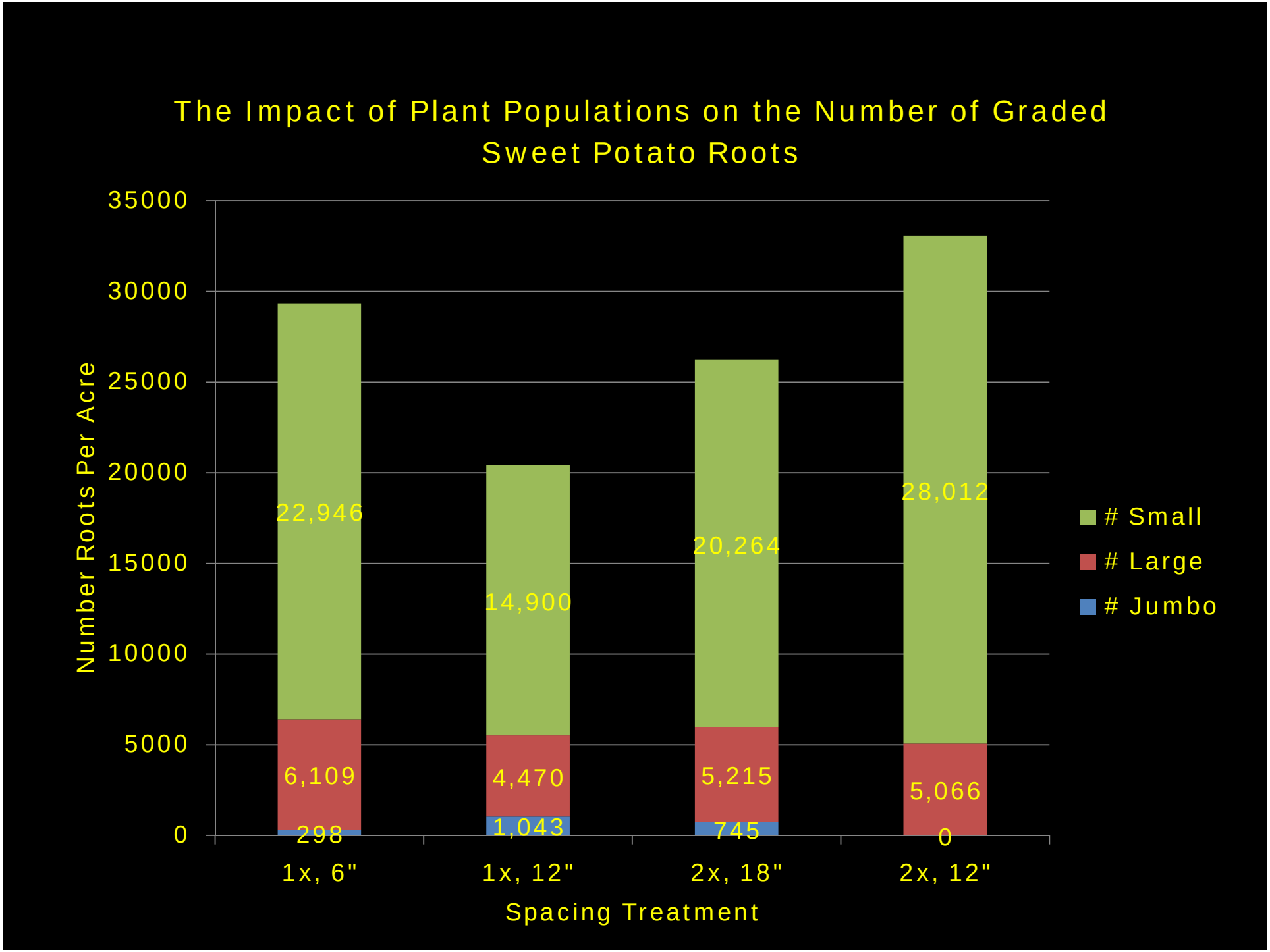
Single row, 12” apart

Single row, 6” apart


6"
12"
2x-12"




The Impact of Plant Populations on the Total Yield of Marketable Sweet Potato Roots
Pounds of Marketable Roots Per Acree
25000
20000
15000
10000
5000
0
11,443
7,904
682
8,299
5,833
2,414
10,445
7,025
1,676
13,783
6,370
0
1x, 6"
1x, 12"
2x, 18"
2x, 12"
Spacing Treatment
Weight Small
Weight Large
Weight Jumbo


The Impact of Plant Populations on the Number of Graded Sweet Potato Roots
Number Roots Per Acre
35000
30000
25000
20000
15000
10000
5000
0
22,946
6,109
298
14,900
4,470
1,043
20,264
5,215
745
28,012
5,066
0
1x, 6"
1x, 12"
2x, 18"
2x, 12"
Spacing Treatment
Small
Large
Jumbo

Number of Plants per Acre and Cost

Number of Rows per Bed	Spacing in the rows	Number of Plants per Acre[1]	Cost of Plants per Acre[2]
1	6”	13,400[1]	$763.80
1	12”	6,700[1]	$415.40
2	18”	8,935[1]	$643.32
2	12”	13,400[1]	$763.80
Typical Southern Plantings[3]	Rows 42” apart In-row 12”	12,450[3]	$709.65

[1] Based on plastic mulched raised beds on 6.5’ centers

[2] Plant costs were calculated using Scott Farms figures for 2012 and includes shipping.

[3] These plant populations were determined using recommendations from Louisiana and are bare ground plantings.

Results:

- For this study, the double row at 18” resulted in yields that we would be interested in due to a high number of “Large” roots and fewer “Small” roots.

- However, I would also not rule out the 2x 12” spacing either, but beware there may be a higher number of “Small” roots.

Transplant Density Trial

Variety = Covington

Instead of using slips, we wanted to evaluate using transplants (slips that would be put into 50 cell plug trays 2 weeks before planting and left in a greenhouse)

We then compared the following densities:

- Single(1X) Row 6” apart
- Single Row (1X) at 12” apart
- Double staggered row (2x) at 12” apart
- Double Staggered row 18” apart
- Traditional slips shipped in 2 days before planting trial in the field, single row, 12” apart.

All plants were planted into 4” raised beds mulched with black plastic on 6.5’ centers on June 24, 2011. Harvested on October 20, 2011.

Transplants
ready to go


TRANS 6"
TRANS + DOP


2x, 18"


2x, 12"


TRANS DOP
1 row 12"
1x, 12"

Transplants one week after planting

Slips one week after planting


2x - 12"
Transplant


2x - 18"
Transplant


Transplant
Trial
Slips


12"

Results:

- Unfortuneately, I do not feel that this was a good trial due to the fact we did not get our slips in May when we needed them.

-The June 24th planting date was too late in my opinion which is evident by the high numbers of small roots

-Also, “Root Balls” could also pose another problem with transplants

Thank You

Northeast SARE Program for supporting the Research and Education Project, “Improving the yield and quality of sweet potatoes grown in New York”

Project number: LNE 10-292

And Samascott Orchards for hosting these trials!

Scott Farms for supplying the slips!