CONSIDERATIONS FOR PLANTING NEW WALNUTS

DO WE KNOW WHAT WE ARE DOING??

BOB BEEDE, UCCE, EMERITUS

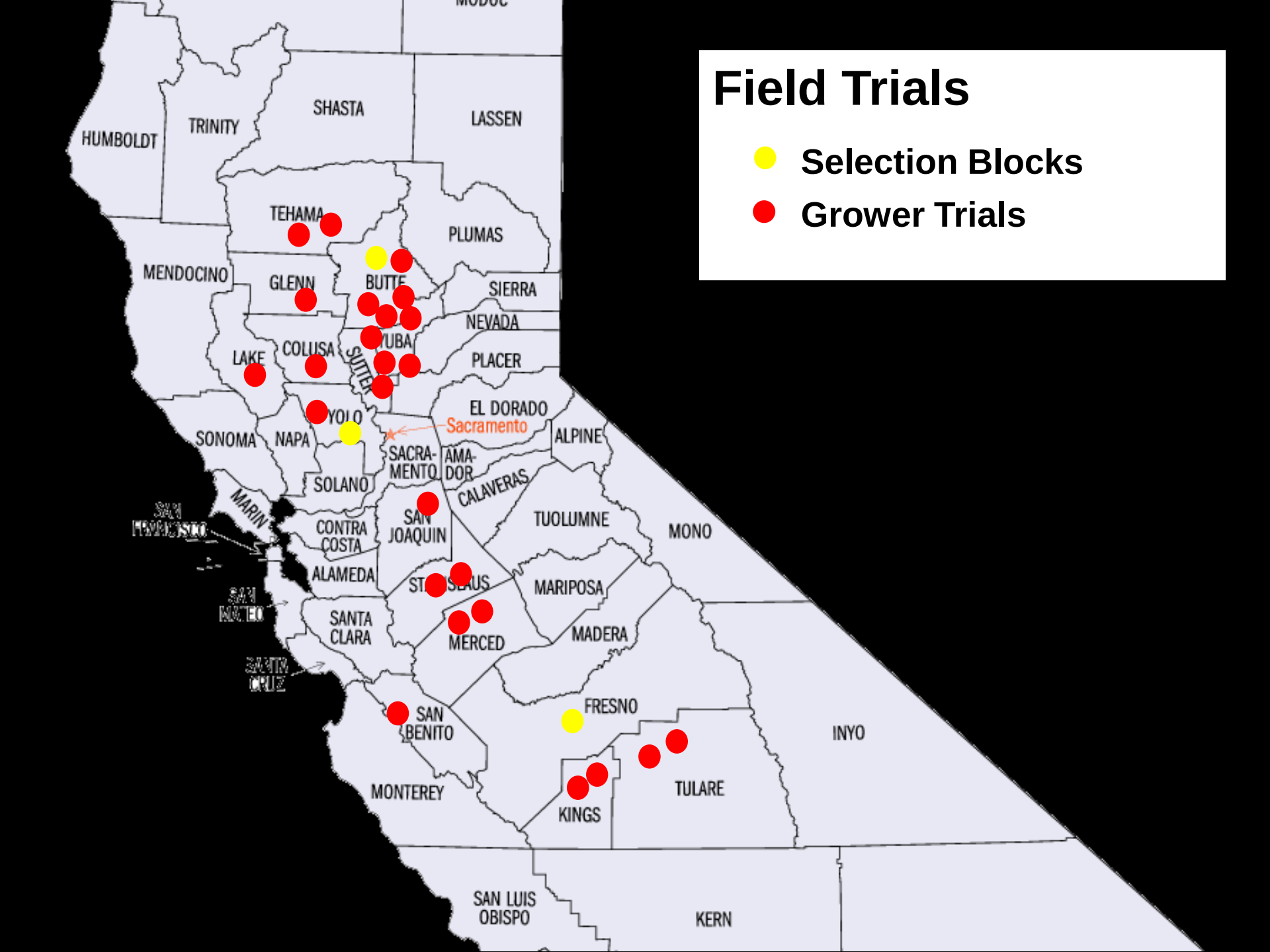
New Varieties and Clonal Rootstocks

Chuck Leslie
Gale McGranahan

Walnut Improvement Program

UC/USDA Researchers

Farm Advisors


Field Trials
Selection Blocks
Grower Trials
HUMBOLDT
TRINITY
SHASTA
LASSEN
MODOC
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
NEVADA
LAKE
COLUSA
SUTTER
YUBA
PLACER
YOLO
EL DORADO
Sacramento
SONOMA
NAPA
SACRA-MENTO
AMA-DOR
ALPINE
SOLANO
CALAVERAS
MARIN
SAN FRANCISCO
CONTRA COSTA
SAN JOAQUIN
TUOLUMNE
MONO
ALAMEDA
STANISLAUS
MARIPOSA
SAN MATEO
SANTA CLARA
MERCED
MADERA
SANTA CRUZ
SAN BENITO
FRESNO
INYO
MONTEREY
KINGS
TULARE
SAN LUIS OBISPO
KERN

Ivanhoe (95-11-14)

- **Very early harvest date** (Payne/Serr)
- **Light kernel color**
- High yield
- Blight susceptible
- Nut –smooth shells, watch size
- Growth habit – small stature, may stress
  Grow on Paradox
- Kernel – 57%, 7.6g, easy halves

Field Data Comparison

Trait	Ivanhoe	Serr	Chandler
Leafing date	3/19	3/18	4/03
Peak female	3/28	4/06	4/22
Peak male	4/08	3/31	4/11
Harvest	9/13	9/17	10/07
Yield	7	5	7
Blight	*		

Nut Data Comparison

Trait	Ivanhoe	Serr	Chandler
In shell wt. (g)	13.3 g	14.6	13.4 g
Kernel wt (g)	7.6 g	8.2	6.7 g
Percent kernel	57 %	56.1%	49 %
% Extra light	41 %	7%	53 %
% Light	51 %	70%	41 %

Ivanhoe 2009

1st Shake:

Edible: 55%
RLI: 54.0

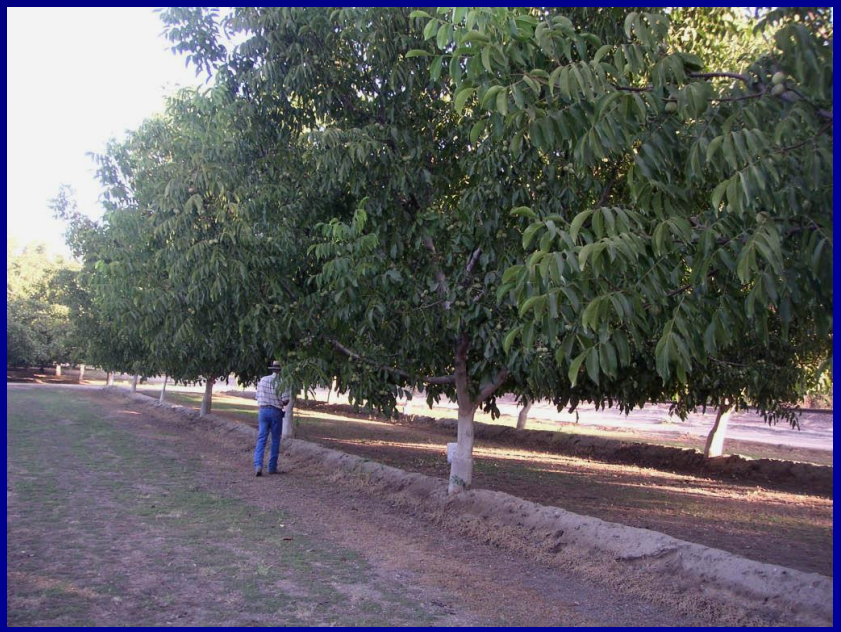
2nd Shake:

% Edible: 53.4%
RLI: 52.3
Jumbo sound: 93%
ExL: 33%
Light: 45%
Nut wt.: 13.2 g

Ivanhoe
(95-011-14)

Released: January 2010

Nurseries are licensed to sell



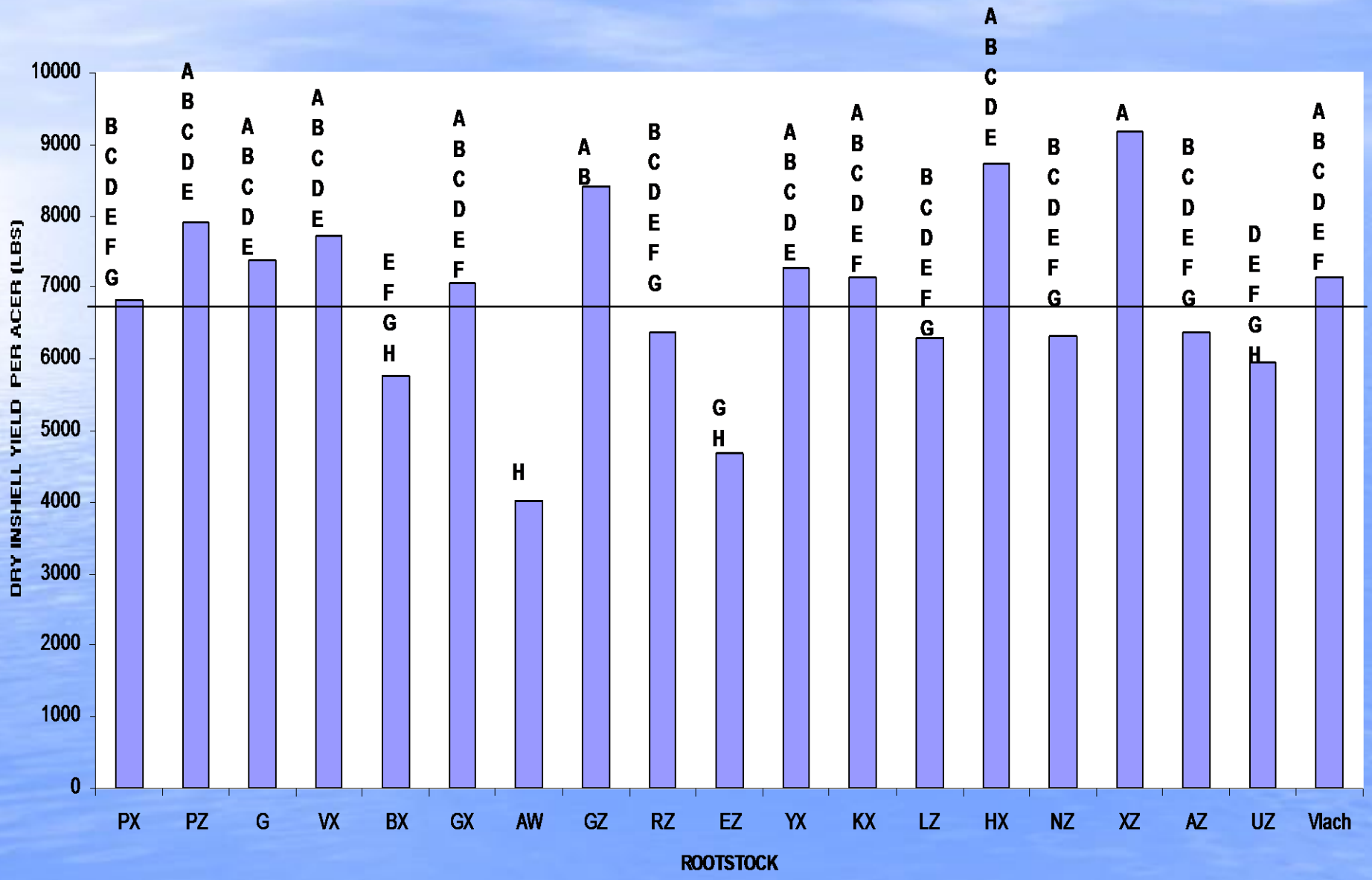
SOLANO: 95-011-16

SELECTED 2003

SOLANO CHARACTERISTICS

1. PROTANDROUS (MALE FLOWERS BLOOM FIRST)
2. SIBLING OF IVANHOE (67-13 X CHICO)
3. HARVESTS ABOUT A WEEK AFTER PAYNE
4. CONSIDERED TO BE A REPLACMENT FOR VINA TIMING
5. GOOD YIELD AND COLOR
6. LARGE LIGHT COLORED KERNELS;. 7.9 GRAMS (LARGER THAN IVANHOE)
7. OVAL NUT WITH GOOD SHELL THICKNESS AND SEAL, SUITABLE FOR INSHELL
8. 54% EDIBLE KERNEL; MIGHT DARKEN WITH DELAYS IN HARVEST
9. TREES UPRIGHT AND VIGOROUS IN GROWTH HABIT
10. AVAILABLE AT LICENSED NURSERIES.

Figure 3. Dry inshell yield per acre for 2006 (eighth leaf). Kings County Paradox Diversity Trial, (TulareCultivar). Grand mean of 6682 lbs/ac indicated by horizontal gridline. Four replications per mean. Treatments with similar letters are not statistically significant at p=0.05



VX211

Paradox
(N. California Black x English)

- Exceptional vigor
- Tolerance to nematodes
- Some resistance to Phytophthora
- Excellent survival in orchard replant trials
- Additional trials are in progress
- VX211 is commercially available

RX1

Field trial: wet site, *Phytophthora cinnamomi*

Photo courtesy of Joe Grant

RX1

Texas black X English

- Resistance to *Phytophthora*
  P. citricola and *P. cinnamomi*
- Smaller tree, less vigorous than VX211
- New field trials are underway
- RX1 is commercially available

Vlach

- One of the first Paradox clones to be micropropagated
- 7-10 years in growers fields
- Is commercially available

Methyl Bromide Alternatives Trial-Kings County

Bob Beede, UC Kings Co., Emeritus

Mike McKenry, Extension Nematologist, Emeritus

Bruce Lampinen, UC Walnut, Almond Specialist

Sam Metcalf, Staff Research Associate, UCD

Greg Browne, Plant Pathologist, USDA/ARS, UCD

Dan Kluepfel, Bacteriologist , USDA-ARS, UCD

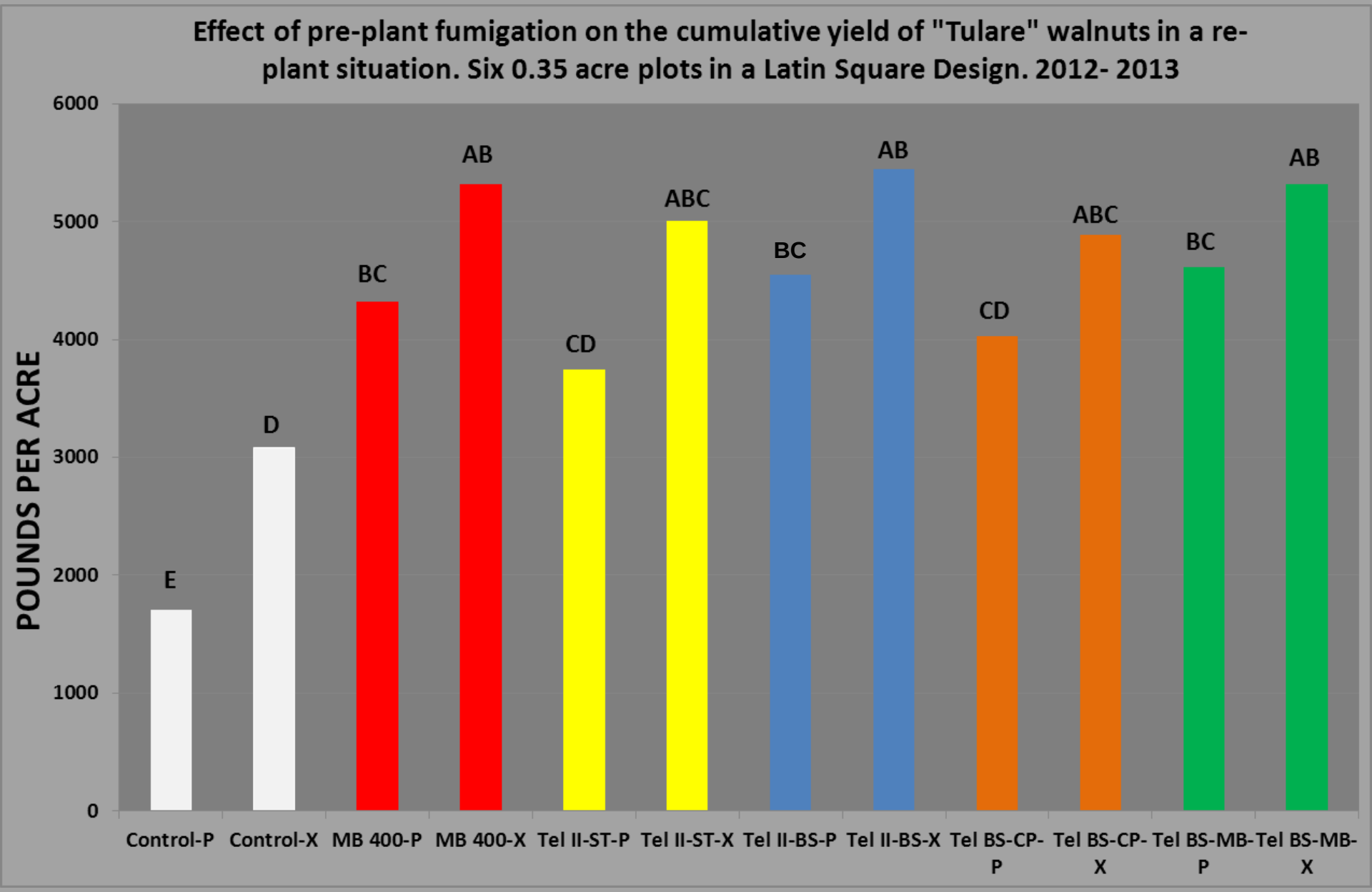
OCTOBER 27, 2010

FUMIGATED

Two-year-old Tulare Scion


OCTOBER 27, 2010
NO FUMIGATION CONTROL
SAME TREE AGE

Fumigated Tulare Walnuts in a Replant Site: Fifth Leaf (Dec 2013)


Effect of pre-plant fumigation on the cumulative yield of "Tulare" walnuts in a re-plant situation. Six 0.35 acre plots in a Latin Square Design. 2012- 2013
POUNDS PER ACRE
6000
5000
4000
3000
2000
1000
0
E
D
BC
AB
CD
ABC
BC
AB
CD
ABC
BC
AB
Control-P
Control-X
MB 400-P
MB 400-X
Tel II-ST-P
Tel II-ST-X
Tel II-BS-P
Tel II-BS-X
Tel BS-CP-P
Tel BS-CP-X
Tel BS-MB-P
Tel BS-MB-X

WHEN PLANTING CONVENTIONAL WALNUT TREES REMEMBER TO:

1. PLANT ON BERMS IF YOU PLAN ON BERMS. THIS PREVENTS BURYING THE CROWN OF THE TREE AND HIDING CROWN GALL.

2. DO NOT DIG OR AUGER THE PLANTING HOLES TOO DEEPLY. THIS ENCOURAGES PLANTING THE TREE TO DEEPLY.

3. DO NOT PLANT THE TREE TOO DEEPLY! THE UPPERMOST ROOT ON THE TREE SHOULD JUST BE COVERED BY THE SOIL. HEAD THE TREE AT ABOUT KNEE HIGH, LEAVING 4-5 LATERAL SCION BUDS. STAKE AND PAINT SOON AFTER PLANTING. THE TALLER THE STAKE THE BETTER!

4. WATER THE TREE IN ASAP AFTER PLANTING, AND MAKE SURE THAT THE SOIL HAS THOROUGHLY “CAVED IN” AROUND THE ROOTS. DIG WITH YOUR HAND OR A TROWEL TO CHECK THIS TO BE TRUE!

5. DO NOT WATER THE TREE TO SOON AFTER LEAF OUT! WATER USE IS VERY LOW AT THIS TIME. CHECK THE SOIL MOISTURE FREQUENTLY BY HAND, AND IRRIGATE WHEN IT NO LONGER HOLDS TOGETHER WHEN LIGHTLY BOUNCED IN YOUR HAND.

6. PLACING FERTILIZERS IN THE HOLE AT PLANTING WAS TESTED BY SIBBETT, AND FOUND TO BE OF NO VALUE IN IMPROVED GROWTH.

WHEN PLANTING CONVENTIONAL WALNUT TREES REMEMBER TO:

7. ONCE THE TREES REACH ABOUT 12 INCHES OF GROWTH, SELECT THREE OF THE MOST VIGOROUS SHOOTS IN THE BEST POSITIONS, AND REMOVE THE REST TO DRIVE THE VIGOR INTO THE REMAINING THREE. MAKE YOUR FIRST TIE ON THE LONGEST SHOOT. APPLY A FOLIAR ZINC SPRAY (3 POUNDS ZINC SULFATE/100 GALLONS WATER). APPLY YOUR FIRST NITROGEN AT ABOUT 12 INCHES.

8. SUCKER THE TREE AS EARLY AS POSSIBLE TO ALLOW HAND REMOVAL OF ROOTSTOCK SHOOTS. SUCKER WITH UN32 AT YOUR DESIRED CONCENTRATION AT YOUR OWN RISK. SUCKING EARLY REDUCES THE NEED FOR PRUNING TOOLS AND LARGE WOUNDS, BOTH WHICH CAN INCREASE THE RISK OF CROWN GALL.

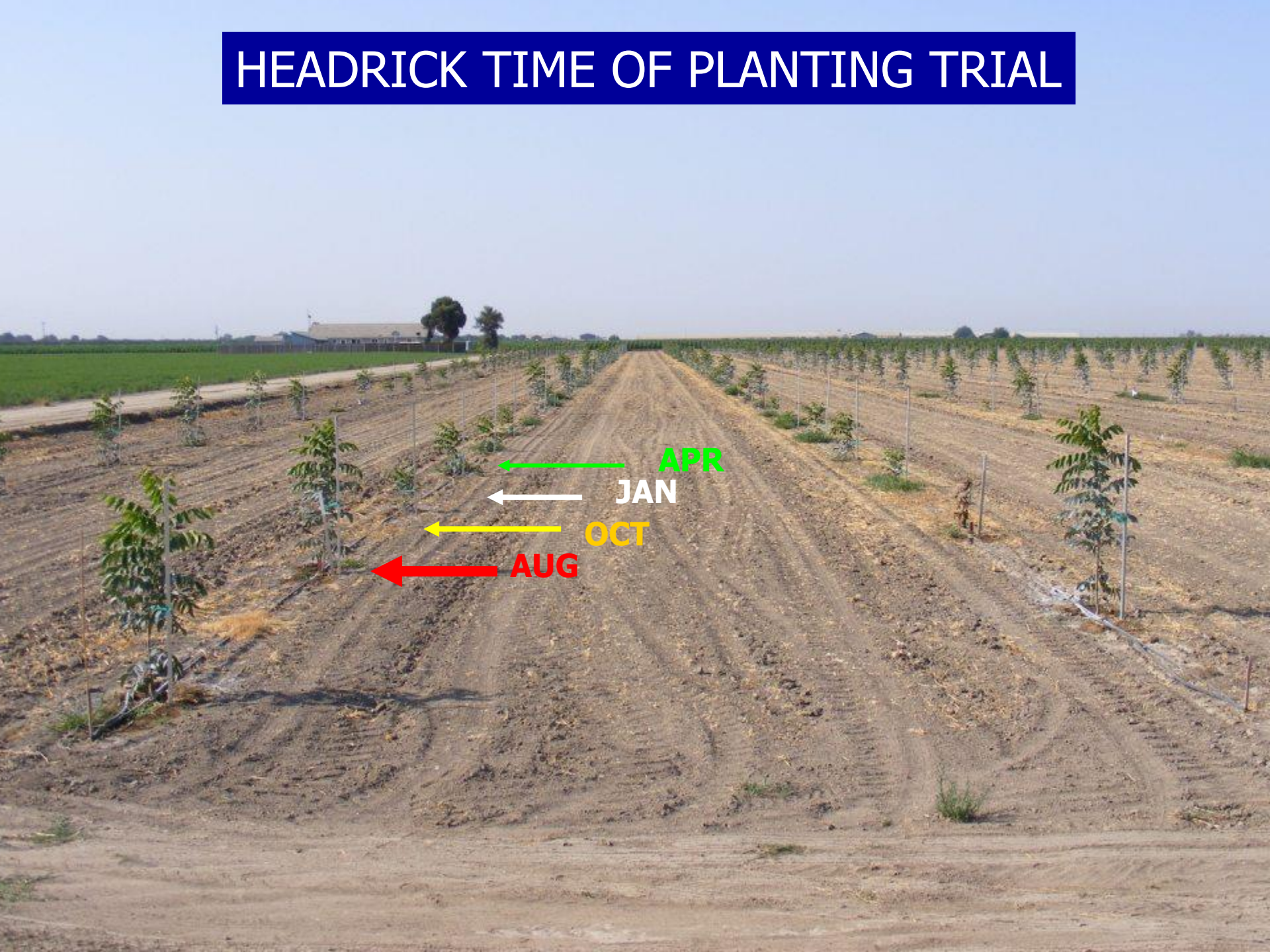
9. AT ABOUT 24”, THIN OFF ONE OR BOTH OF THE EXTRA SHOOTS, OR CUT THEM IN HALF TO FORCE GROWTH INTO THE SELECTED SHOOT. SELECT A NEW MAIN SHOOT IF IT IS GROWING MUST FASTER THAN THE ORIGINAL ONE NOW TIED TO THE STAKE.

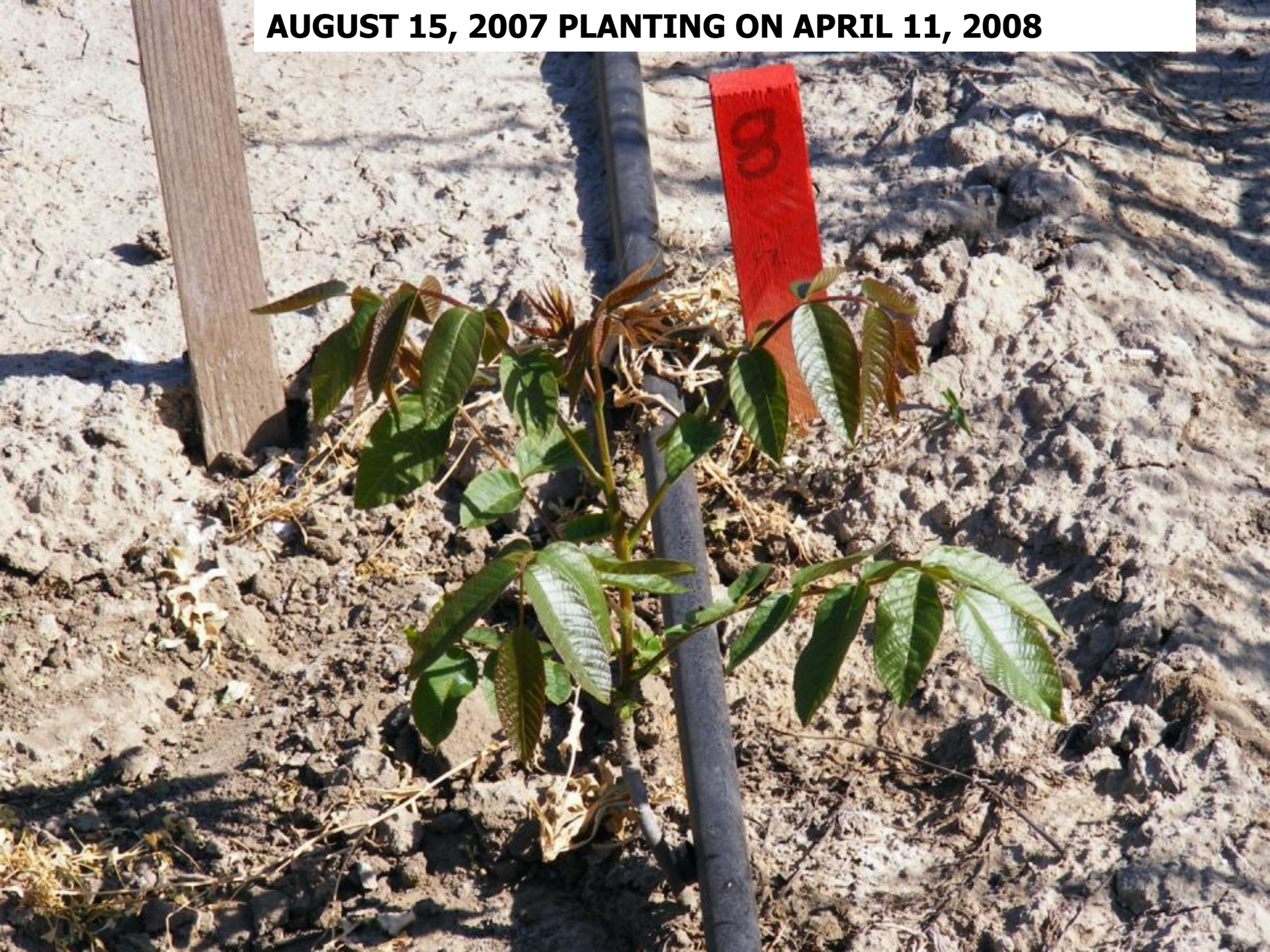
10. IF SURFACE IRRIGATING, WATER IN FURROWS ON EACH SIDE OF THE TREE FOR THE FIRST TWO YEARS TO PREVENT DROWNING THE TREES, CONSERVE WATER, AND REDUCE PUMPING COSTS.

PLANTING WALNUTS: CLONAL VERSUS CONVENTIONAL PLANTS


BURCHELL
NURSERY

HEADRICK TIME OF PLANTING TRIAL

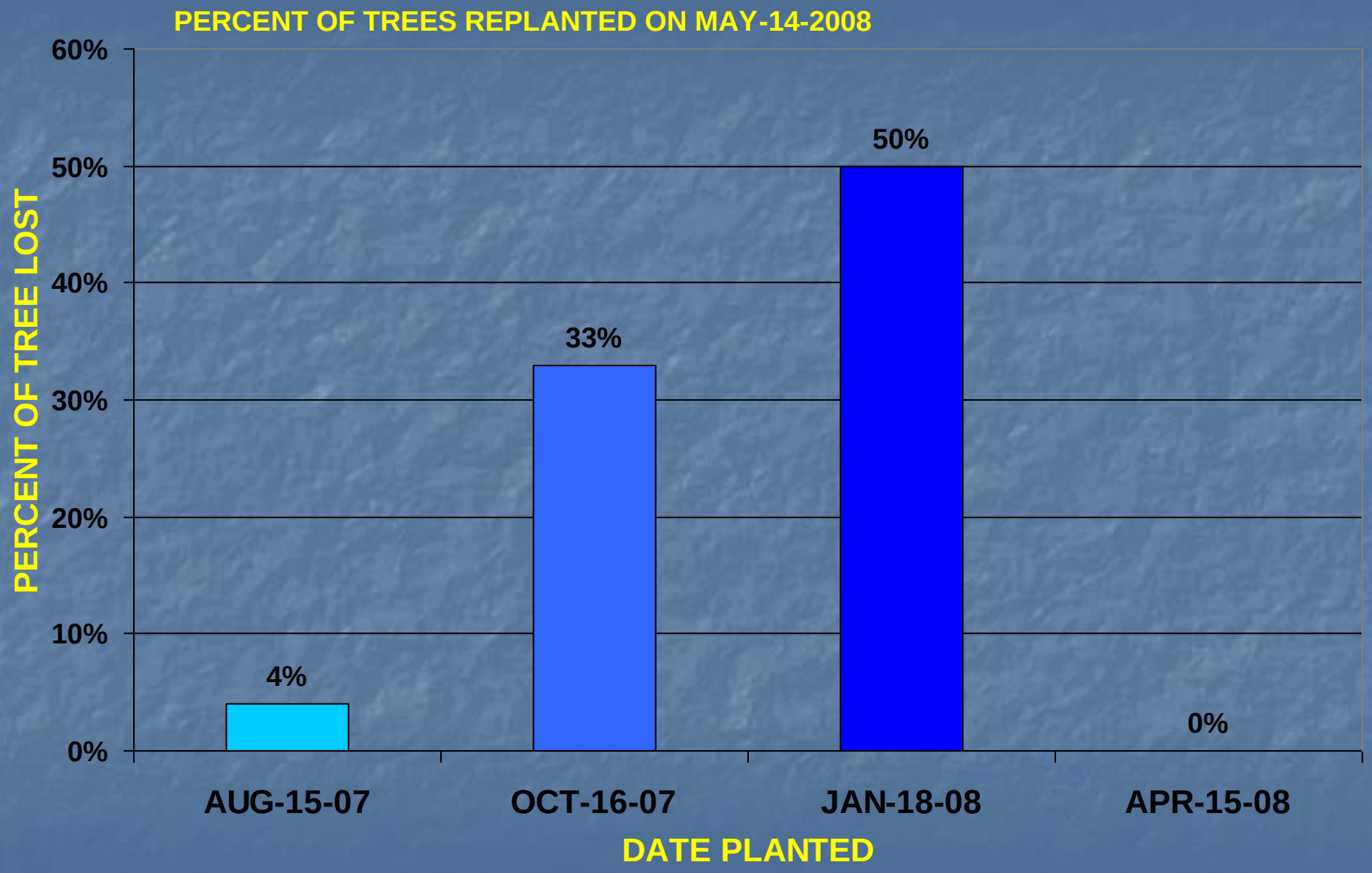



AUGUST 15, 2007 PLANTING ON APRIL 11, 2008
9

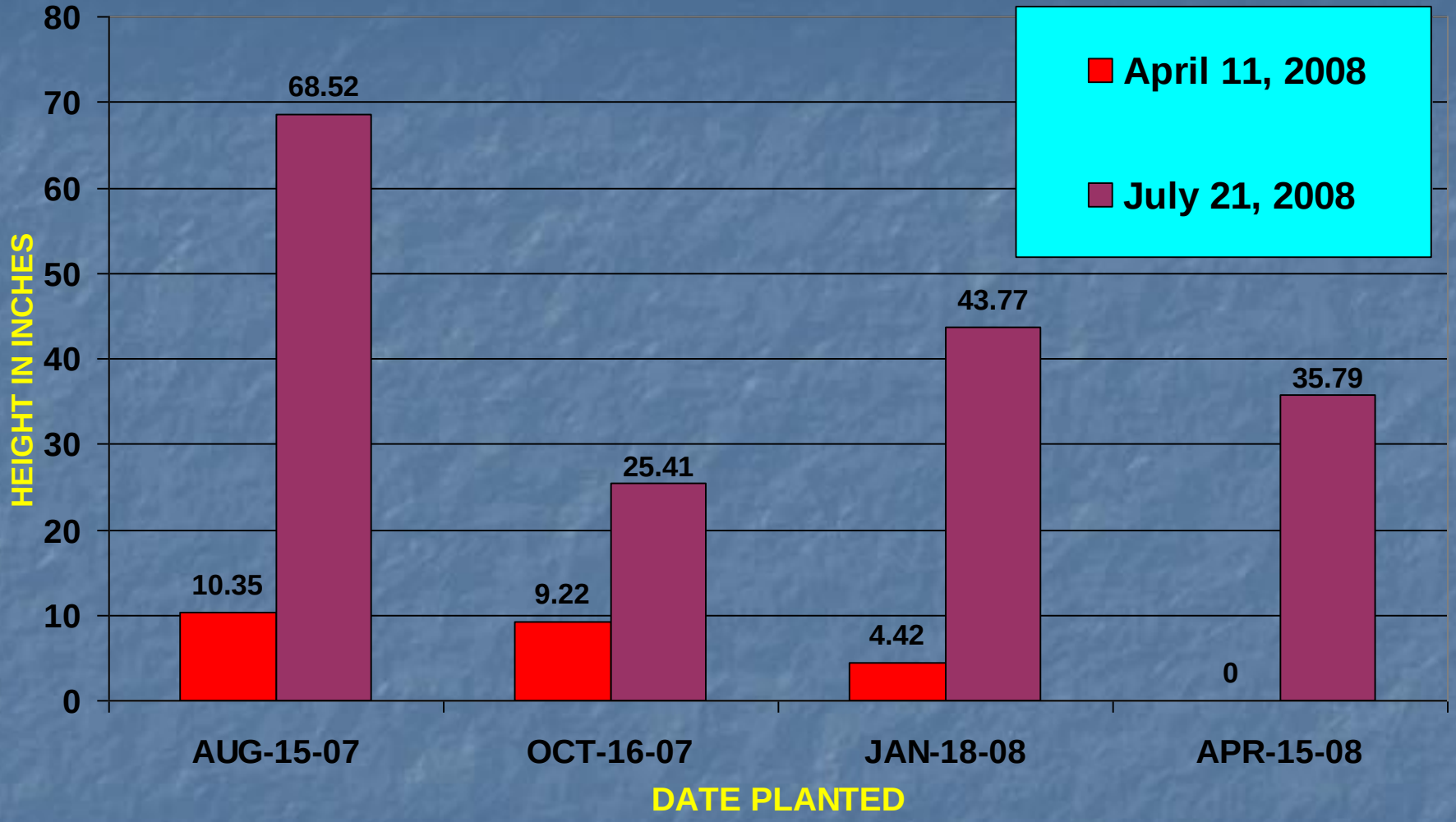

OCTOBER 16, 2007 PLANTING
ON APRIL 11, 2008


JAN 18, 2008 PLANTING
ON APRIL 11, 2008
38

HEADRICK FARMS TIME OF PLANTING PROJECT



HEADRICK FARMS TIME OF PLANTING PROJECT



JULY 28, 2008

THANK YOU FOR LISTENING!

COMMENTS ARE WELCOME!