INFLUENCE OF VARIETY, FERTILIZERS AND DATE OF HARVEST ON QUALITY OF POTATOES MANUFACTURED INTO CHIPS

by

Walter N. Brown, Freeman S. Howlett and Wilbur A. Gould
Department of Horticulture
Ohio Agricultural Experiment Station

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PROGRESS REPORT NO. 4

ON

STORAGE AND CHIPPING PHASES

by

Wilbur A. Gould, Robert Cowley, Lynn Miller, Tom Murtaugh, Jr.,
Clara Sue Parrott, Donald Yingst, and David Yoder

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PROGRESS REPORT HATCH 122[1] POTATO PROCESSING PHASES
Variety - Cobbler

A - Harvest Schedule for 1960 was Harvest I, July 8; Harvest II, July 22; Harvest III, August 2; Harvest IV, August 16; Harvest V, September 1; and Harvest VI, September 15,

B - Storage Treatments -
Check - Fry directly after digging
Lot 1 - (70-1) Hold two weeks after digging and fry
Lot 2 - (70-2) Hold two weeks after digging, store @ 45° for 4 months, then move to 55° and hold two weeks. Move to 70°F and fry @ 1, 10 and 20 day intervals.
Lot 3 - (70-3) Hold two weeks after digging, move to 55° and hold for 3 months then move to 70°F and fry @ 1, 10 and 20 days.
Lot 4 - (55-1) Within one week after digging store @ 55° for 2 months, then remove to 70°F and fry @ 1, 10 and 20 day intervals.
Lot 5 - (55-2) Within one week after digging store @ 55° for 3 months, then remove to 70°F and fry @ 1, 10 and 20 day intervals.
Lot 6 - (55-3) Within one week after digging store @ 55° for 4 months, then remove to 70°F and fry @ 1, 10 and 20 day intervals.
Lot 7 - (45-1) Within one week after digging store @ 45° for 4 months, then remove to 70°F. and fry @ 1, 10 and 20 day intervals.
Lot 8 - (45-2) Within one week after digging store @ 45° for 4 months, then remove to 55°F and hold 2 weeks and remove to 70° and fry @ 1, 10 and 20 day intervals.
Lot 9 - (45-3) Within one week after digging store @ 45° for 4 months, then remove to 55° and hold 4 weeks and remove to 70°F and fry @ 1, 10 and 20 day intervals.

C - Chipping Methods -
1. Weigh out 2 lb. sample.
2. Peel in abrasive peeler for 30 seconds with water running during peeling operation.
3. Weigh peeled sample and calculate peel loss.
4. Slice in Littrell slicer (approximately 18 slices per inch).
5. Remove slices from water, drain for 1 minute and count number of slices per 1 lb.
6. Place slices on fryer belt and fry slices in peanut oil (feed end 360°F and discharge end 350°F).
7. Determine weight of fried sample and calculate % yield.
8. Place sample in bag, code, seal and store for analysis.

D - Quality Evaluation and Analysis -
1. Specific gravity - Use NPCI hydrometer method and record to nearest thousand (See Table I).
2. Count - Determine number of tubers per 8 lb. of potatoes by actual count - Use specific gravity sample.
3. Dark Chips - Subjectively evaluate all slices for dark chips or chips with dark rings, bruises, dark stem ends, Hollow Heart, etc. Count number of total slices and those dark and determine % dark chips. Use MacBeth Executive Light for uniform lighting.
4. Color of slices - Coughlin Scale - match chips to Coughlin color chart. Use MacBeth Executive Light and white tray. Score on scale 1 tc 10 (1 equals white and 10 very dark, 7 or less is acceptable).
5. Color of ground chips - Grind chips in Waring Blender
   a. Agtron - Standardize Agtron to 30 (gray disc) and read color of ground chips on Agtron scale. See Chart I for relationship of Agtron to Coughlin.
   b. Hunter - Standardize Hunter (L-73.4, a-1.0, b-31.7) and read color of ground chips on Hunter L, a and b dials.
6. Reducing Sugar - Determine reducing sugar using Peacock and Bruinstetter method.

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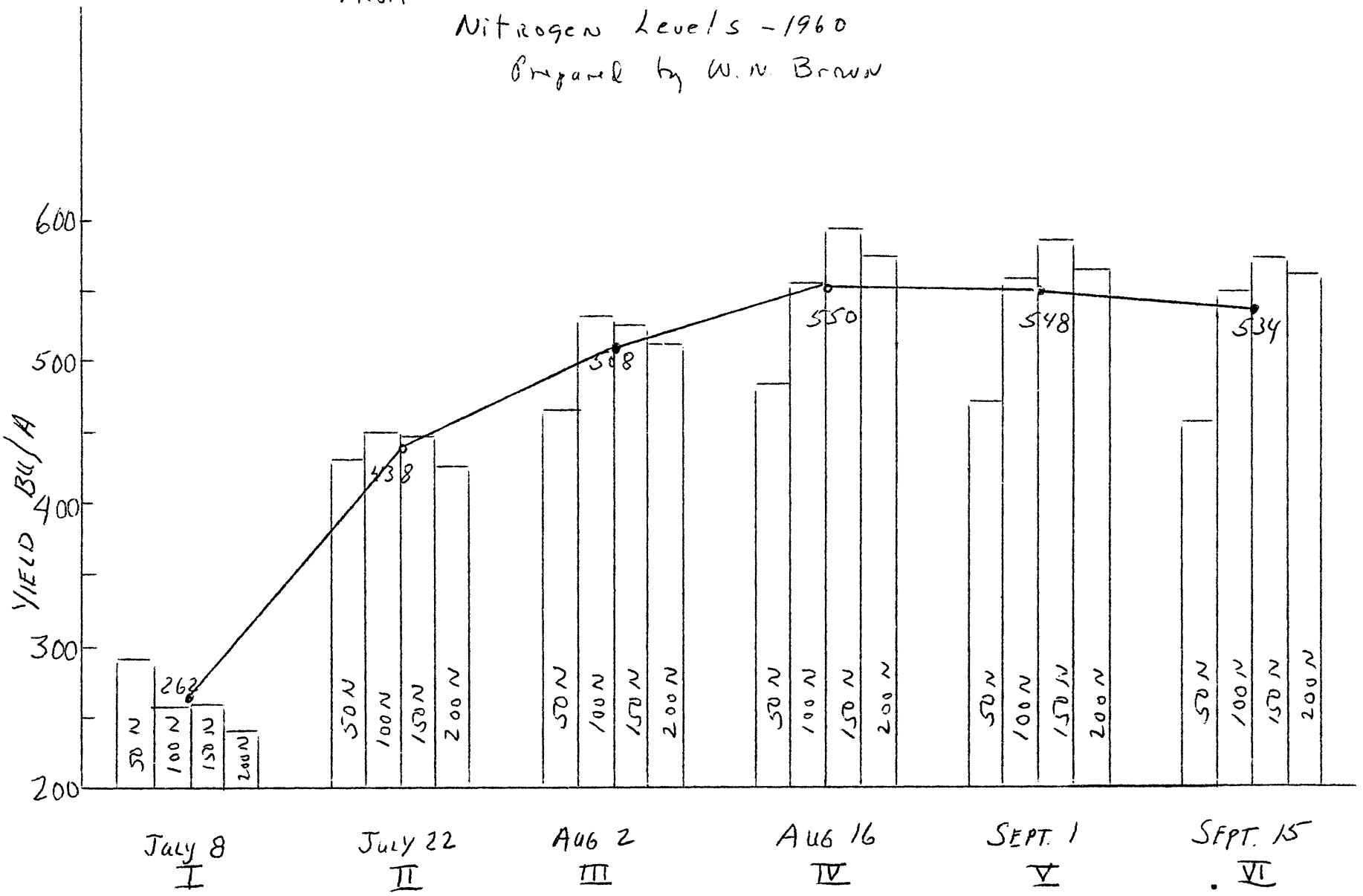
Yields of "A" Size Potatoes From Successive Harvests at Various Nitrogen Levels - 1960

Prepared by W. N Brown



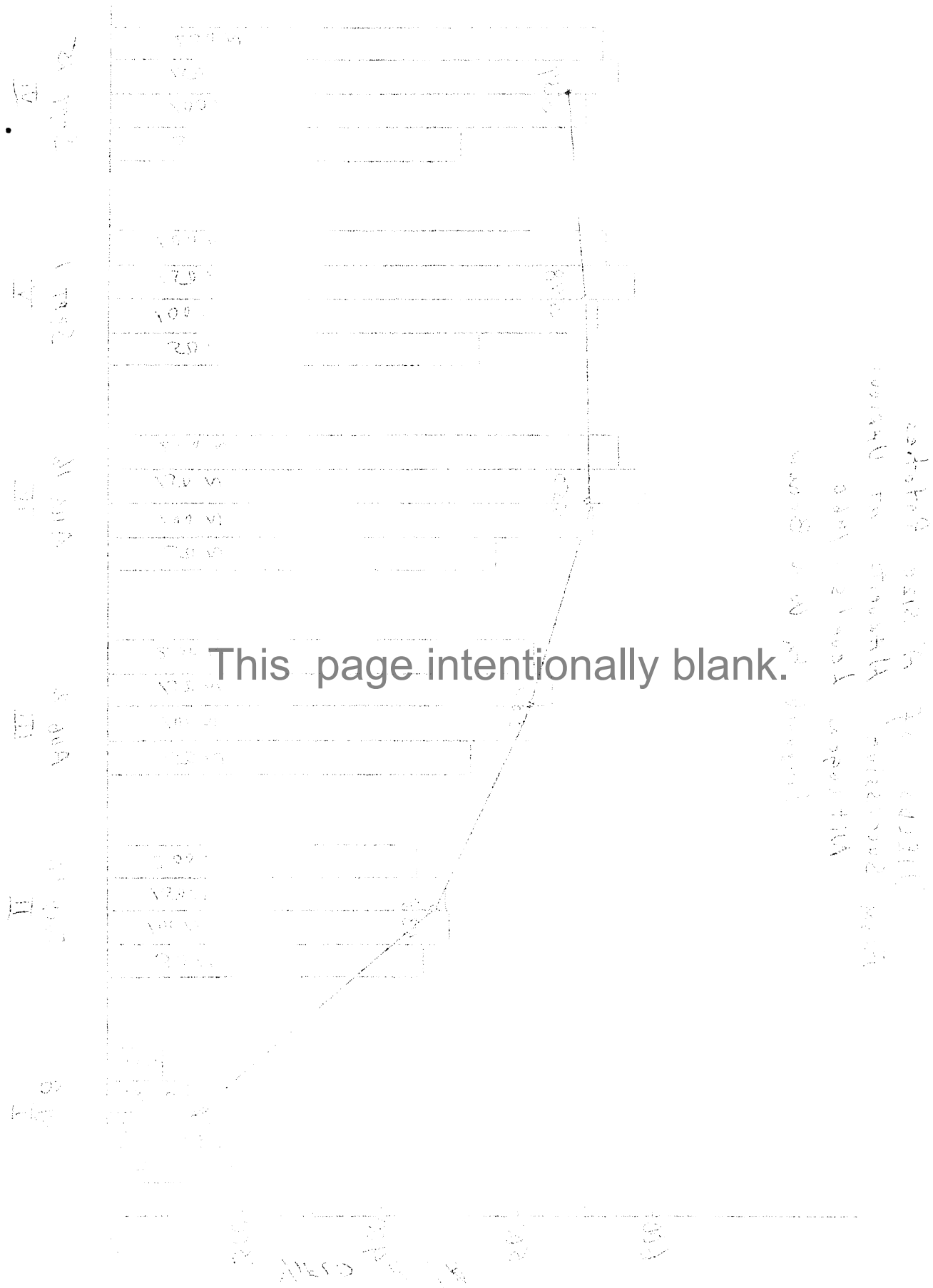


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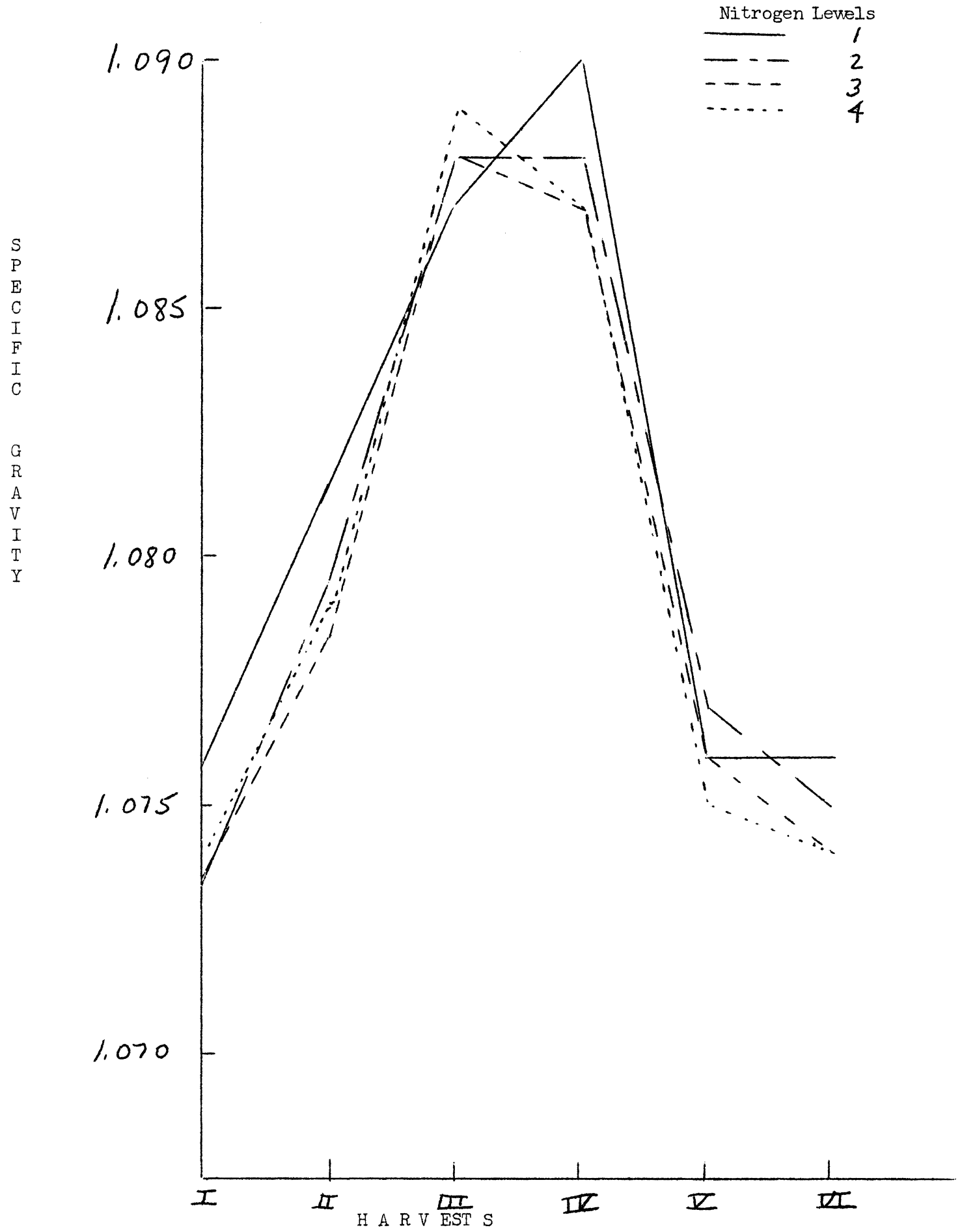
CHART II RELATIONSHIP OF SPECIFIC GRAVITY TO HARVEST DATES AND NITROGEN LELVELS.



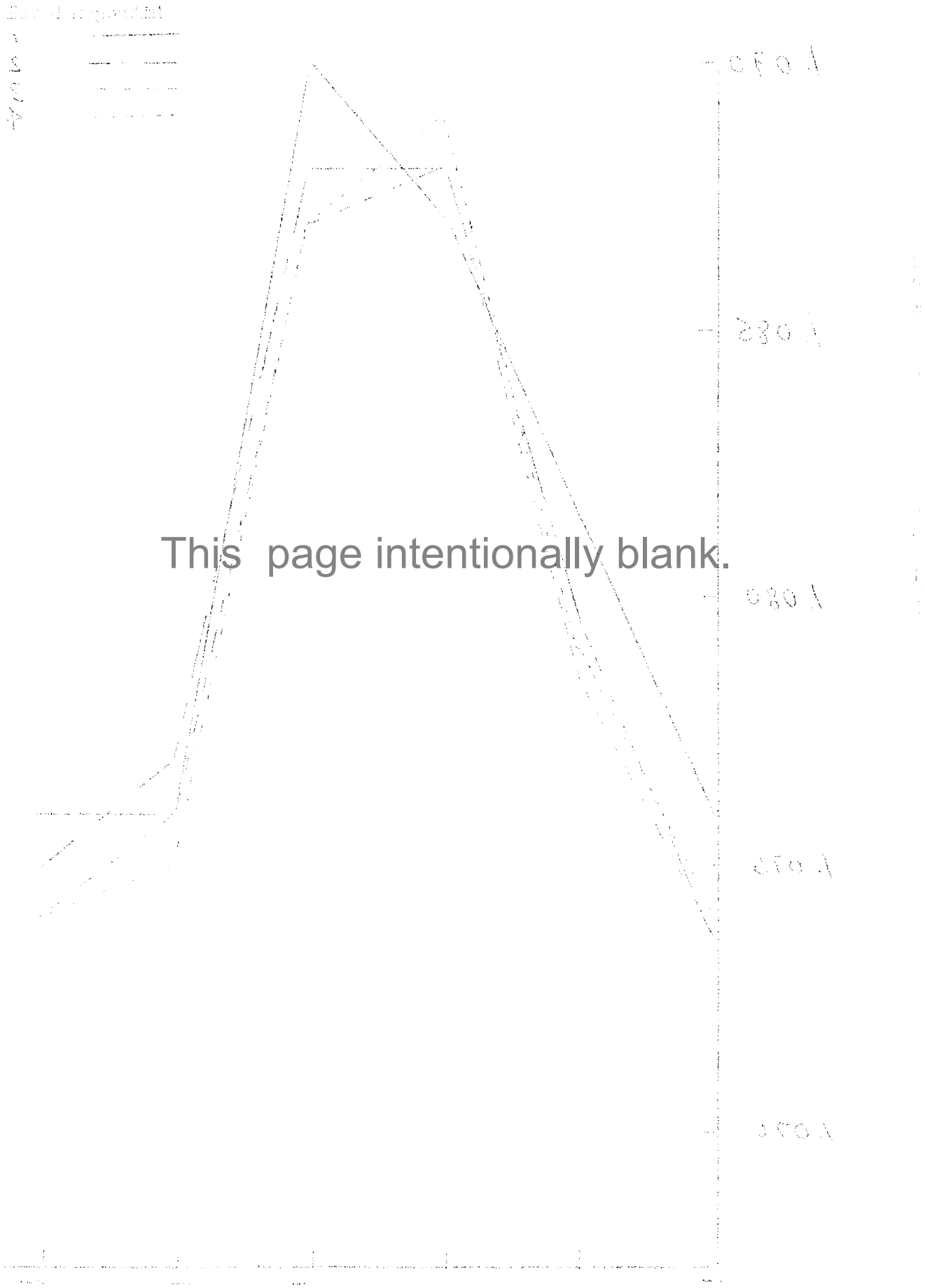


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CHART III RELATIONSHIP OF TUBER COUNT PER 8 POUND SAMPLE TO HARVEST DATES AND NITROGEN LEVELS.

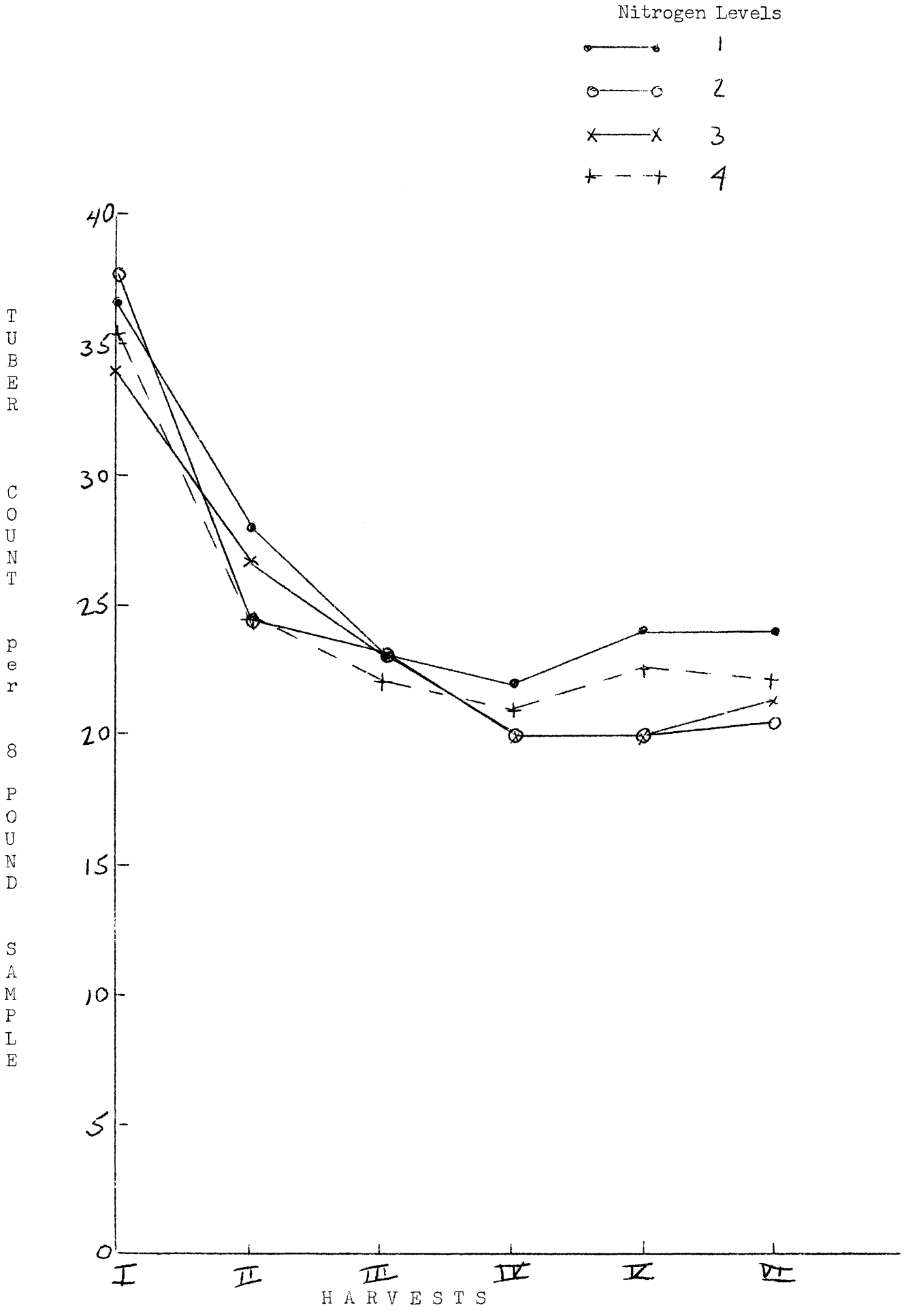

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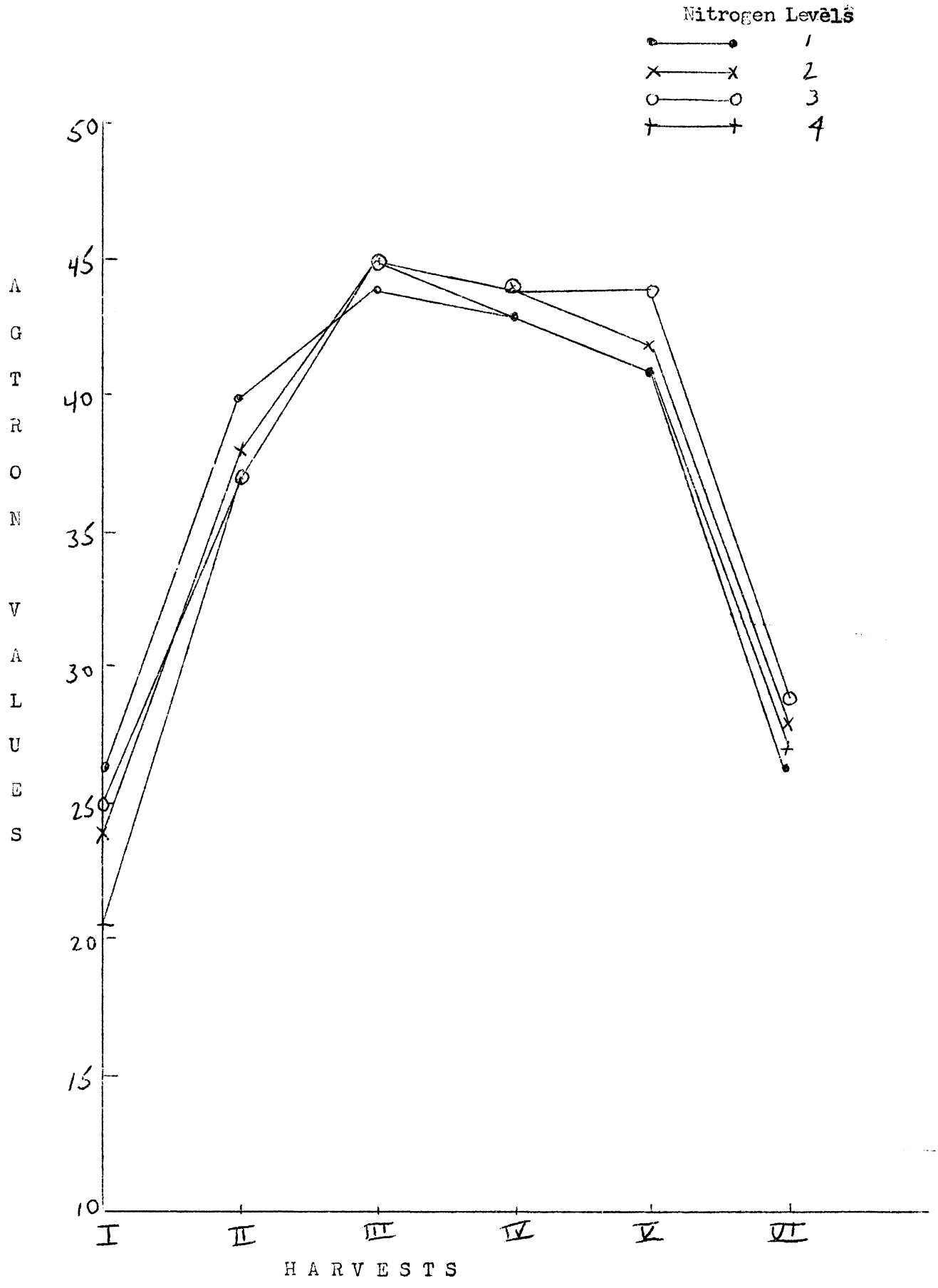
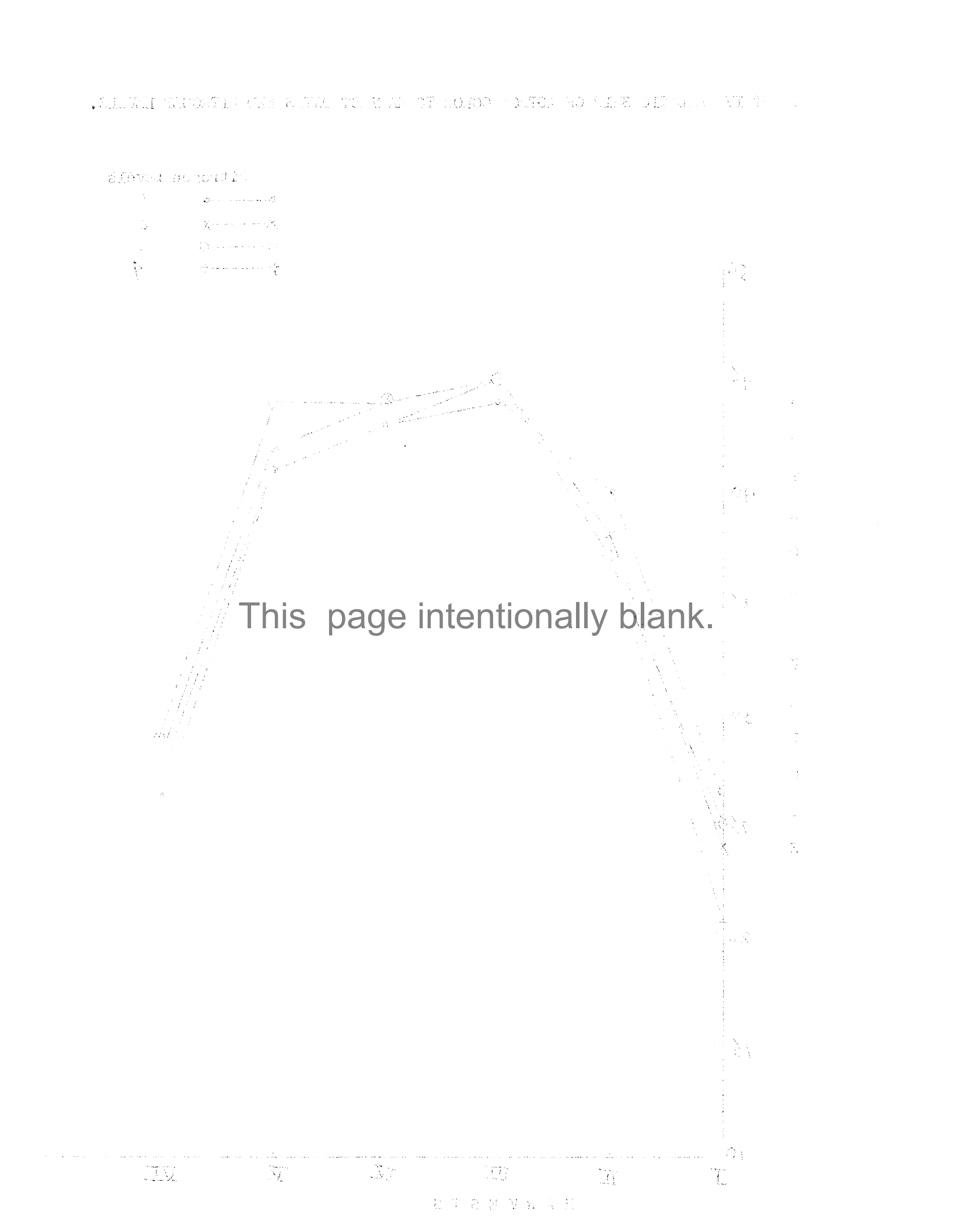
CHART IV RELATIONSHIP OF AGTRON COLOR TO HARVEST DATES AND NITROGEN LEVELS.

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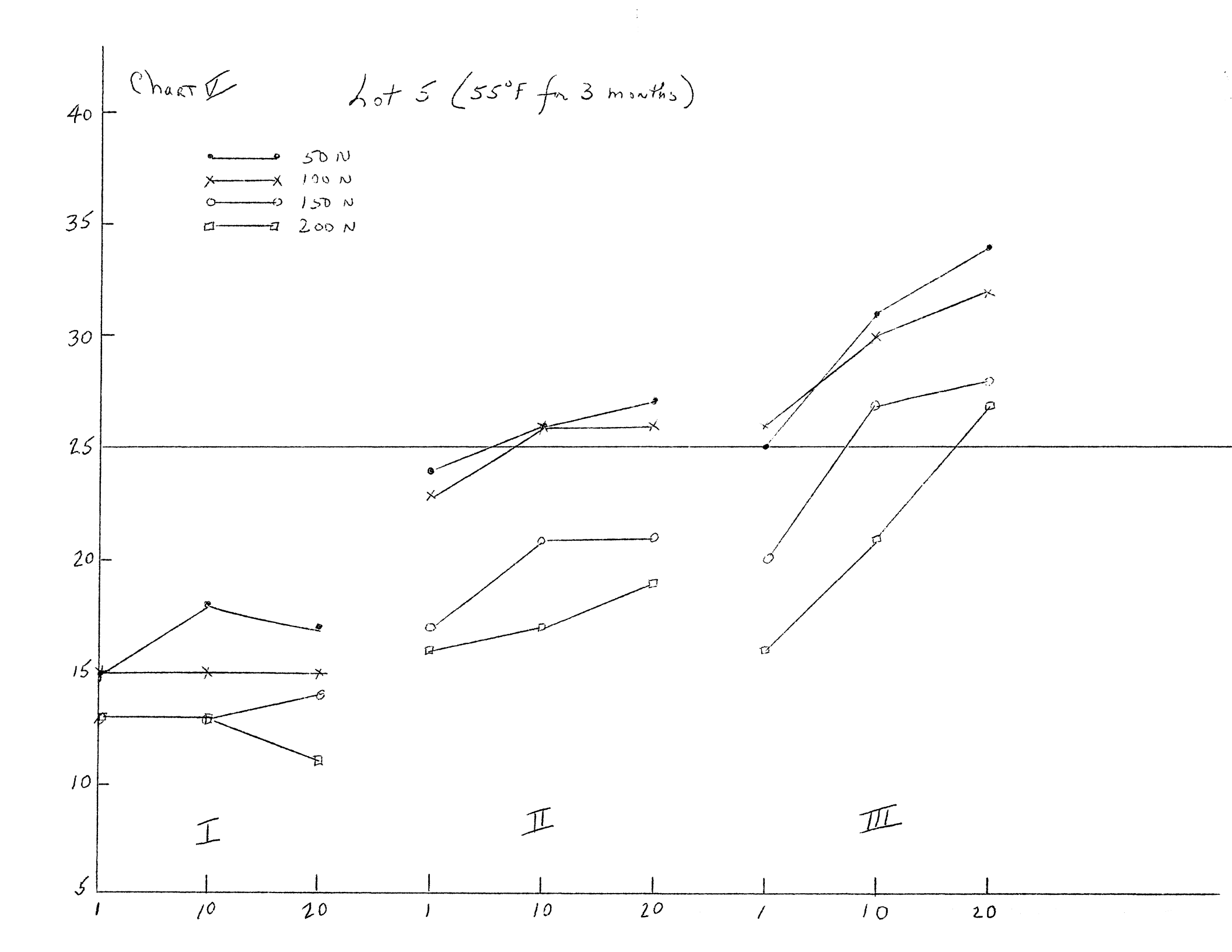
Chart V
Lot 5 (55°F for 3 months)
50 N
100 N
150 N
200 N
40
35
30
25
20
15
10
5
I
II
III
1
10
20
1
10
20
1
10
20

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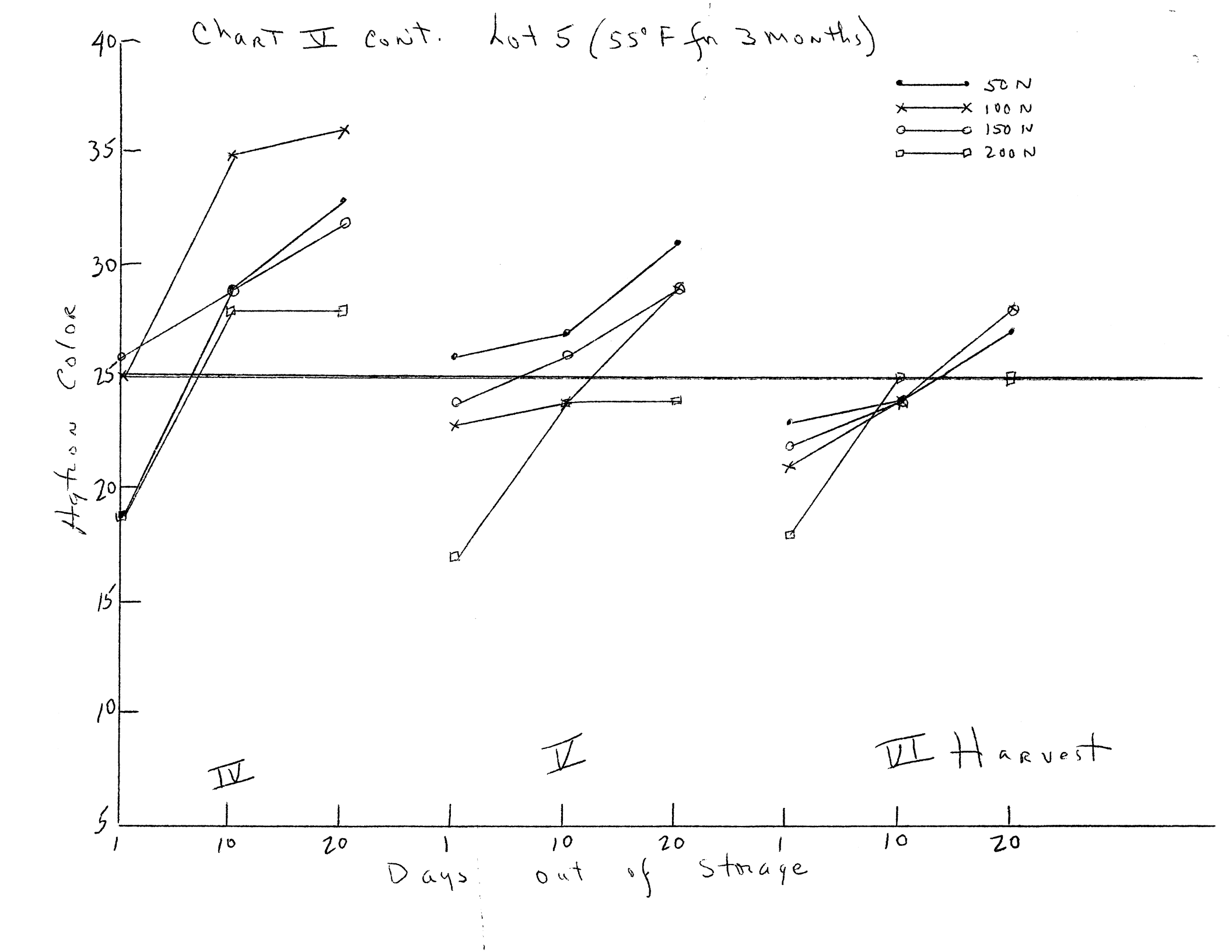
Chart V cont. Lot 5 (55° F for 3 months)
50 N
100 N
150 N
200 N
40
35
30
25
20
15
10
5
Agtron Color
IV
V
VI Harvest
1
10
20
1
10
20
1
10
20
Days out of Storage

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