IPM for waterhyacinth control

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Why this research?

FWC Invasive Plant Management Section RFP

IPM for waterhyacinth

- 2,4-D
- Biocontrol insects
  - *Neochetina* sp. (2)
  - *Megamelus scutellaris*

Reduce herbicide use?

- $3.5MM in FY 11-12

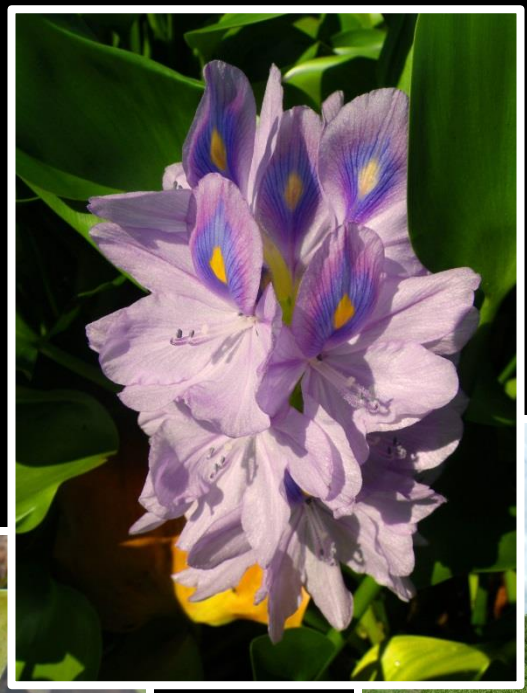
Waterhyacinth

Eichhornia crassipes

S. America late 1800s

Almost any water

- Leaves round, rubbery
- Inflated petioles
- Basal rosette arrangement
- Dark feathery roots
- Large showy purple flowers



2,4-D

Synthetic auxin

1940s

CHARLES H. BRONSON
COMMISSIONER

Florida Department of Agriculture & Consumer Services
Division of Agricultural Environmental Services

SUGGESTED PESTICIDE RECORDKEEPING FORM
for Organo-Auxin Herbicides

Chapter 487.051(1)(b), F.S. and 5E-2.035, F.A.C.

This is a suggested format for recording the information required for application of organo-auxin herbicides and plant growth regulators (general or restricted use) to a land or surface area greater than 5 cumulative acres with a 24-hour period. For a land or surface area less than 5 cumulative acres within a 24-hour period, only wind speed and direction readings are required.

Date_____ Time Began _____ Time Ended _____

Licensed Applicator_____ License No._____

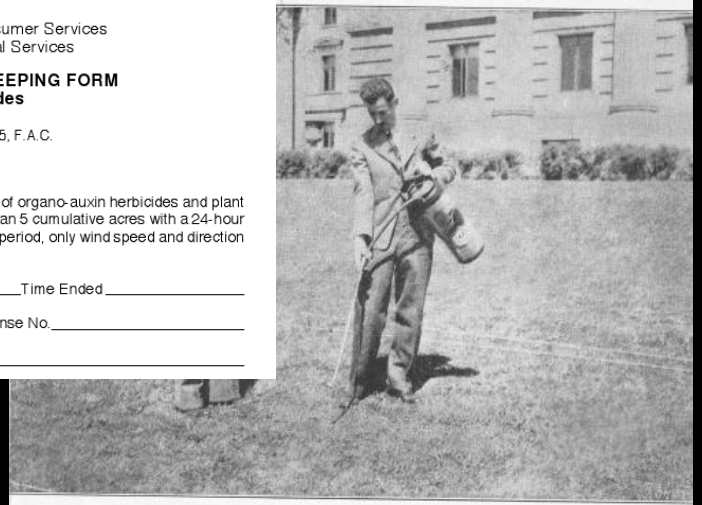
Person making application (if not licensed)_____

Publication No. 201 January, 1946

MANITOBA DEPARTMENT OF AGRICULTURE AND IMMIGRATION
WINNIPEG, MANITOBA

A NEW WEED KILLER
2, 4-D

A brief review of one season's experiments with 2, 4-Dichlorophenoxyacetic Acid, a recently introduced chemical for weed eradication.



Treating dandelions with 2, 4-D, Legislative Building. Manitoba's Minister of Agriculture, the Honourable D. L. Campbell, watches operations.

By
H. E. WOOD
Manitoba Weeds Commission
P. J. OLSON
Professor of Plant Science, The University of Manitoba

By Authority of Hon. D. L. Campbell, Minister of Agriculture and Immigration.

Waterhyacinth critters

Two Argentine weevils

Neochetina bruchi (1974)

Neochetina eichhorniae (1972)

Widely distributed; substantial damage

Plant hopper

Megamelus scuttelaris

S. America (2010)

Augmenting now

Materials and methods

3 x 2 factorial

- 2,4-D: 4qpa (op), 2qpa (half op), 0 (control)
- Critters: present, absent (insecticides)

Mesocosms; 5 reps, CRD

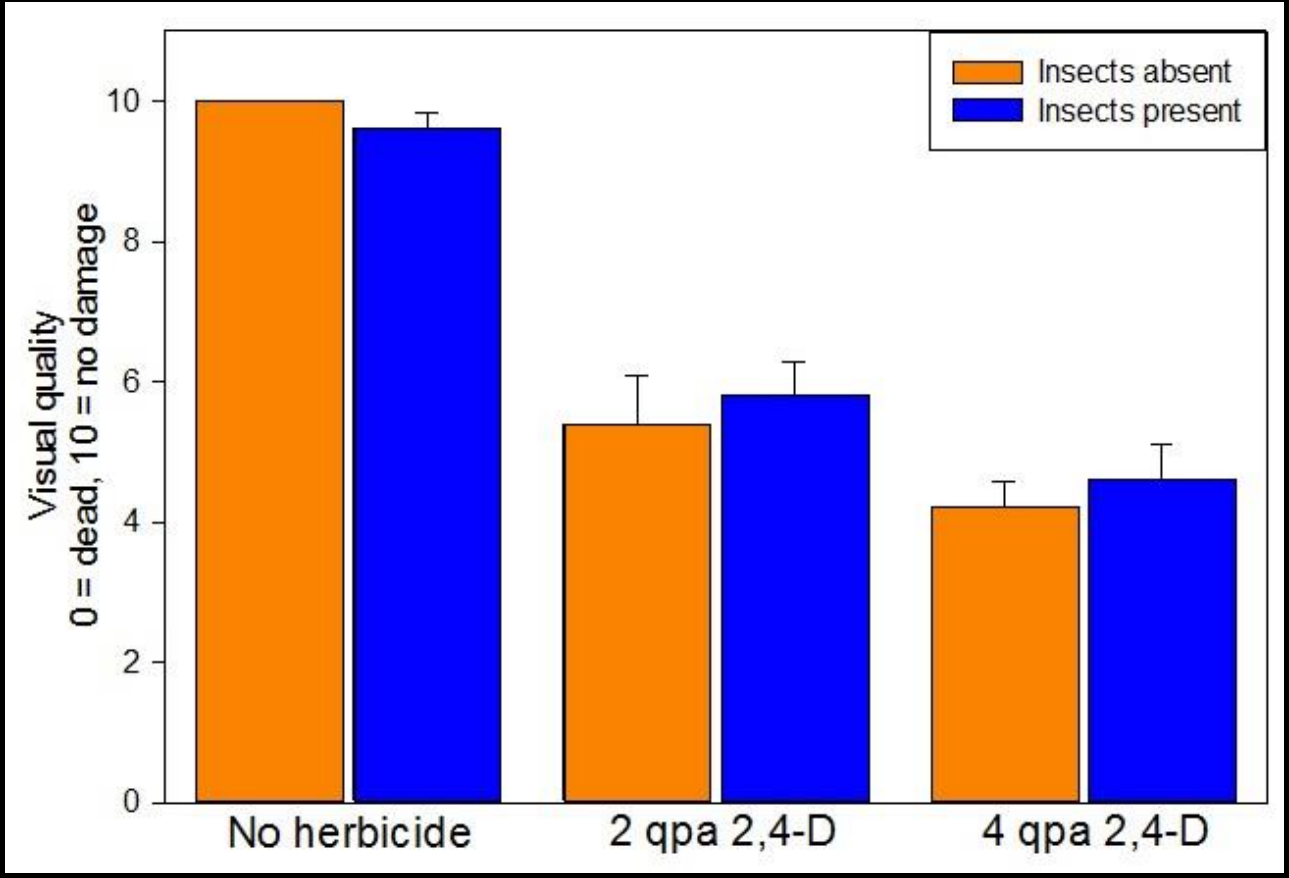
2 July – 7 Nov: 100% cover

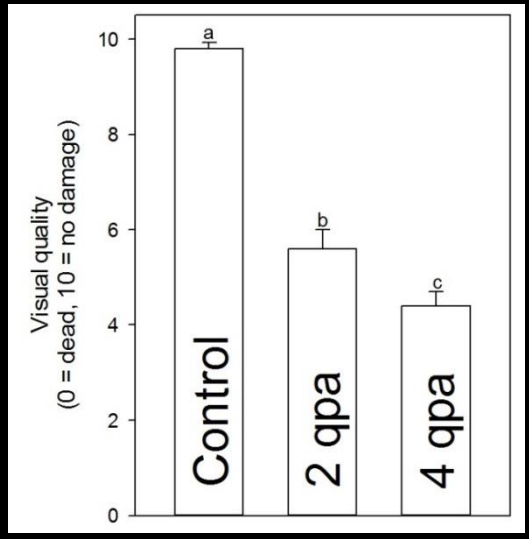
Insecticides or critters + H2O

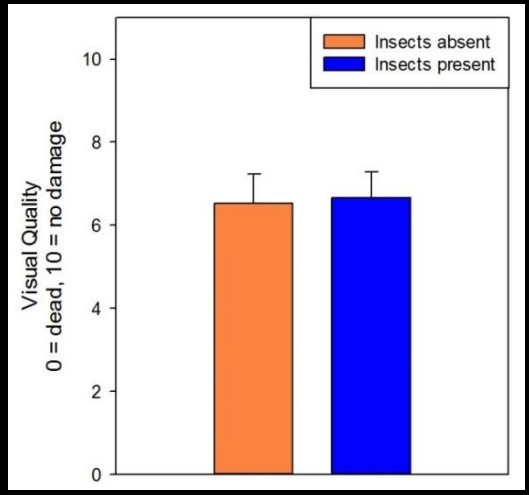
2,4-D: backpack

Harvested 3 MAT

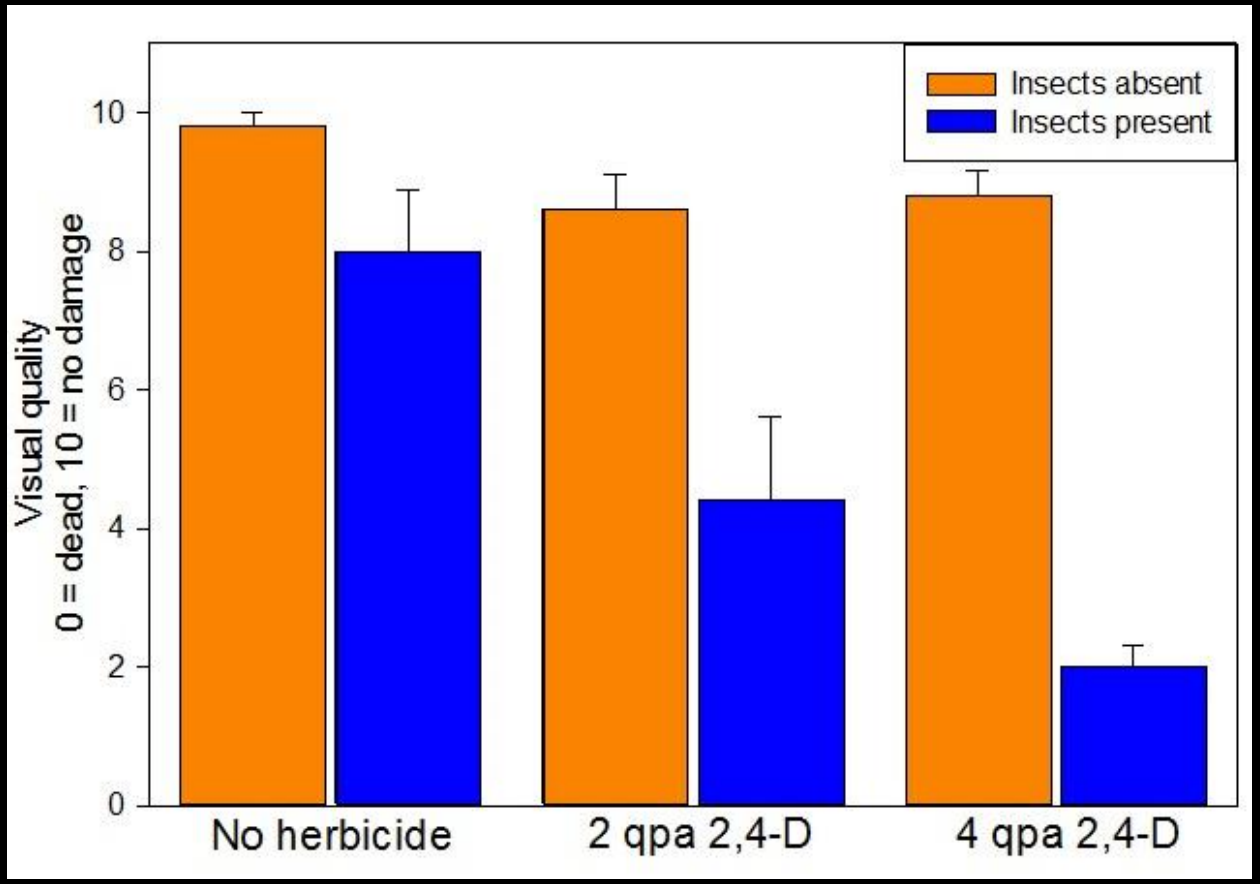
Results: 1MAT (visual)

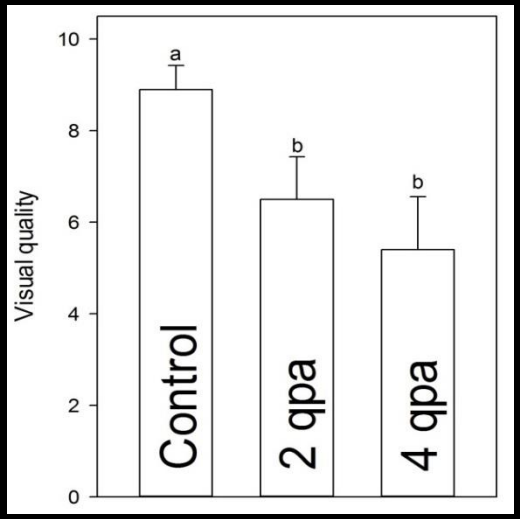


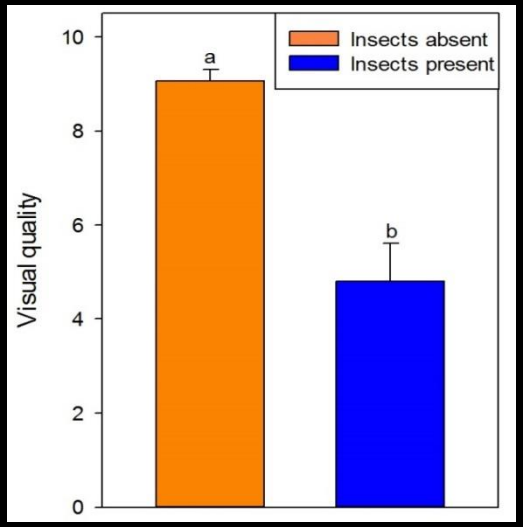




Results: 2MAT (visual)







Results: 3MAT pix

Critters

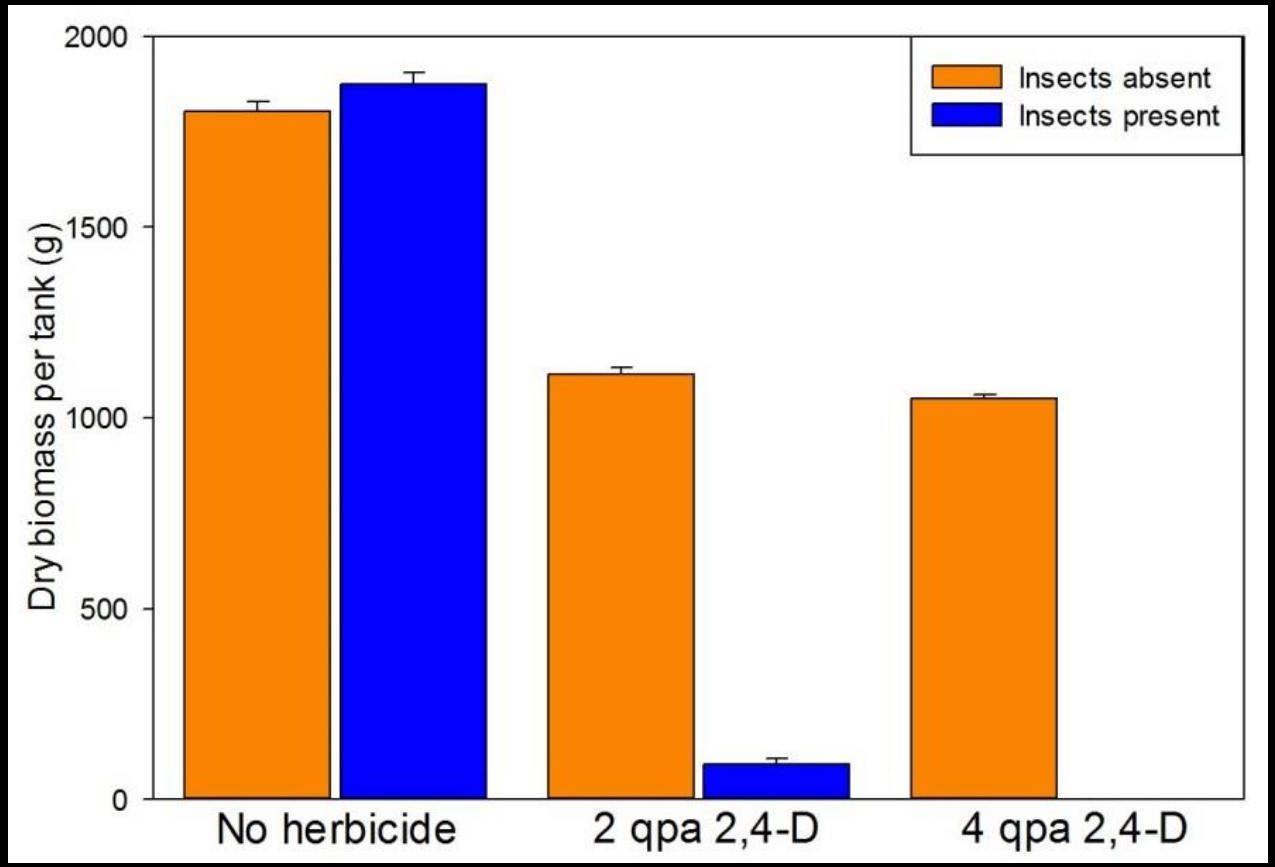
Control

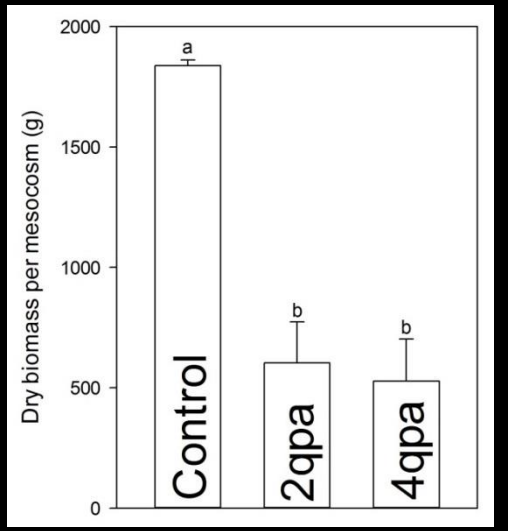
2qpa

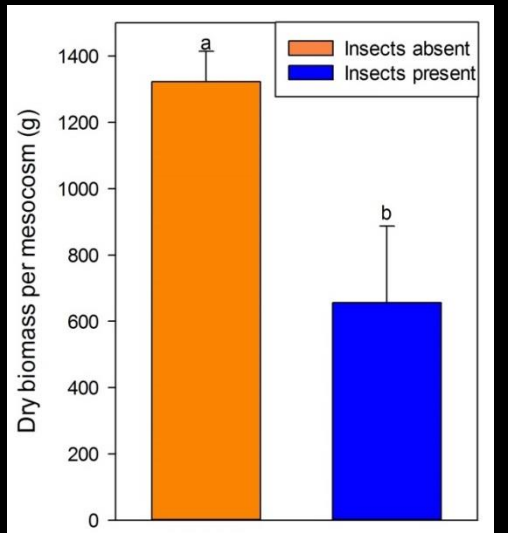
4qpa

No Critters

Results: 3MAT (DW)







Conclusions

IPM good…

Takes a while; 3MAT biomass

No-insect: 4qpa = 2qpa; both: 50% biomass of control

Biocontrol: 4qpa GONE; 2qpa: 5% biomass of control

THM: IPM for WH → less 2,4-D → less $$$

Thanks! lgettys@ufl.edu

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