

Research No.: 31 E-3 ODA Loan Joint Research

Date: 16/Oct/2020

1	General Title	Evaluating changes of the agro-ecological changes under great threats of the in-situ development and climate change
2	Core Members	CTU: Tran Sy Nam (Project Leader), Van Pham Dang Tri Nguyen Thi Hong Diep, Do Thi Xuan Ngo Thuy Diem Trang, Tran Ba Linh, Dinh Minh Quang, Dang Minh Quan, Nguyen Van Cong Japanese Universities and Companies: Taro Mitsunori (TUAT), Jiro Koyama (Kagoshima University)
3	Duration	Jan 2018 – Dec 2020 (3 years)
4	Main Objectives	The aim of the program are to identify impacts of agro-ecological changes under artificial activities and climate changes in the upper reach and coastal areas where the most negative impacts has been formed in the Mekong Delta.

Acute toxicity test for estimating LC50

Test effects of pesticide at sub-acute concentrations on cholinesterase

Effects of pesticide on growth performances of fish at sub-acute concentrations

Carbonium quickly inhibit cholinesterase of fish species and Chlorpyrifos ethyl is heavy and protang inhibition

Table. Concentration (mg/kg) of carbofuran (Carbo) and chlorpyrifos ethyl (Chorpy) in soil/sediment in ricefields and irrigation system in Cho Moi district, An Giang Province, Vietnam

Time	Rice field		Canal 1		Canal 2	
	Carbo	Chorpy	Carbo	Chorpy	Carbo	Chorpy
9-Apr-20	<DL	<DL	<DL	<DL	<DL	<DL
1-May-20	<DL	<DL	<DL	<DL	<DL	<DL
14-May-20	<DL	0.523	<DL	<DL	<DL	2.200

DL for Carbo = 0.05mg/kg, DL for Chorpy = 0.01 mg/kg

Table. Water concentration (µg/L) of carbofuran (Carbo) and chlorpyrifos ethyl (Chorpy) in ricefields and irrigation system in Cho Moi district, An Giang Province, Vietnam

Time	Rice field		Canal 1		Canal 2	
	Carbo	Chorpy	Carbo	Chorpy	Carbo	Chorpy
9-Apr-20	<DL	<DL	<DL	<DL	<DL	<DL
1-May-20	<DL	<DL	<DL	<DL	<DL	<DL
14-May-20	<DL	30.3	<DL	6.9	<DL	11.6

DL for Carbo = 0.1 µg/L, DL for Chorpy = 0.1 µg/L

I. INTRODUCTION

Soc Trang Wetland

Web-Crop of water

My Region

Unimproved water

Environmental pollution

Parameters	Intensive		Semi-intensive		Vietnamese standard (02-19/2014)
	Beginning	The end	Beginning	The end	
Salinity (‰)	10.7±4.4	4.1±2.6	9.4±4.1	5.3±4.1	5-35
pH	7.8±0.4	8.0±0.5	7.9±0.2	7.8±1.0	7-9
Alkalinity (mg CaCO ₃ /L)	125.3±30.7	137.3±32.7	130.1±30.1	128.2±26.0	60-180

II. RESULTS AND DISCUSSION

III. RESULTS AND DISCUSSION (cont.)

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III. RESULTS AND DISCUSSION (cont.)

IV. CONCLUSION

Recommendation

DIVERSITY OF WEED SPECIES IN RICE CULTIVATION AREAS IN AN GIANG PROVINCE

Sample collection:

- from August 2018 to July 2019
- in all rice crops in a year including winter-spring crop, summer-autumn crop and autumn-winter crop
- Time: 7:30 days after seeding
- Place: 5 districts and cities (Cho Moi, Chau Phu, Tinh Bien, Tri Ton and Chau Doc cities)

Treatments:

- Intensive rice
- Semi-intensive rice

Figure 3. Substrate view of weed species in rice cultivation areas in An Giang province

378 weed samples were collected

124 species were identified (belong to 96 genus, 40 families, 2 orders)

Species diversity of genus level:

- 10 genera have 1 species
- 10 genera have 2 species
- 2 genera have 3 species
- 1 genus (Zizaniaceae) have 4 species
- 1 genus (Cyperaceae) have 5 species

Table 1. The five abundant families in the study area

No.	Family	Number	Ratio (%)	Ratio (%)	
1	Poaceae	10	17.87%	19	19.29%
2	Cyperaceae	10	10.84%	8	6.12%
3	Asteraceae	10	7.81%	10	10.20%
4	Euphorbiaceae	8	6.25%	4	4.08%
5	Scrophulariaceae	7	5.47%	4	4.08%
5 families = 12.5% total		52	48.44	45	43.86

Figure 7. Ten species with the highest frequency of occurrence

- Eleusine indica*
- Chloris polystachya*
- Eleusine indica*
- Eleusine indica*
- Eleusine indica*
- Eleusine indica*
- Eleusine indica*
- Eleusine indica*
- Eleusine indica*
- Eleusine indica*

6	Comments (if any)	This research still continues towards conducting (Any comments are welcome.)
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