

**

*

120

0.90 0.62

.(Kumuk and Akgungor, 1996)

.(Vogel, 19949)

.(Serageldin, 1996 2001)

.(EORG, 2002)

.(Brundtland Report, 1987)

.(1991)

.(1988)

(1993 Brundtland Report, 1987)

(Oppenheim, 1978)

2005/7/18

2005/2/23

*

**

(Prochaska, (Along and Martin, 1995) 1998)

(Bruening et al., 1992)

(1985)

(Knowledge)

(Practice/ (Affective/feelings) (Action) behavior)

(Vogel, 1994) (1988)

(Papadaki- Klavianov et. al., 1999)

(Kang and Song, 1984) (Kaiser et al., 1999) %75

(1993) (1990) (1995)

(1996) Brundtland 2000) (Report, 1987 (1985)

(Bruening et al., 1992)

(1996) (1991) (1997)

(Bruning and Martin, 1991 ; Bruning, 1992)

79

(2004)

(15) : (2)
17) (27) (20)

.(

.(1998)

Likert scale

1 5

5 1

12

:

.1

11

.2

.3

Reliability test

0.90

(2)

0.77- 0.62

6538

(Sekaran,

0.60

120

.1984; Springer et al., 2000)

%2

(Moser and Kalton, 1979)

.SPSS,10

: (Kolmogorov-Smirnov)
 (ANOVA)
 (t-test)
 () 79
 : -
 (Kruskal-Wallis)
 (2) (Mann-Whitney) -
 (LSD)
 : (Dunnett'c)
 (Mann-Whitney) -
 (1)
 .(0.5 ±)
 %30 - 26 (2)
 20 %67 %55 45
 %78
 %88
 60

.(Adhikarya, 1994)

:

Kolmogorov-Smirnov

(6) : (3)

%1

4
3

4

5

(79)

(Mann-Whitney) -

(4)

(LSD)

(Dunnett'c)

.(5)

(45)

(10)

(1990)

(1993)

(Bruening et al.,1992)

(Newsletters)

%30 - 25

.1

.2

.3

.4

...

:(1)

55.0	66	45
66.7	80	20
18.3	22	
87.8	105	
69.2	83	60
63.0	75	
65.8	79	
12.5	15	
98.3	118	%50
47.5	57	%25

:(2)

(%)			**	* (%)			
31 (25.8)	53 (44.2)	36 (30.0)	0.040	3.60 (72.0)	0.69	15	
36 (30.0)	42 (35.0)	42 (35.0)	0.038	3.44 (68.8)	0.73	20	
31 (25.8)	51 (42.5)	38 (31.7)	0.037	2.86 (57.2)	0.77	27	
36 (30.0)	49 (40.8)	35 (29.2)	0.038	3.18 (63.6)	0.62	17	
32 (26.7)	46 (38.3)	42 (35.0)	0.032	3.22 (64.4)	0.90	79	

× 1.96 ±

:

%95

*
**

:(3)

	-	: Z
0.383		0.91
0.058		1.33
0.009		1.65
0.791		0.65
0.261		1.01

:(4)

0.001	$\chi^2=17.03$	3	K-S	(56≤ 55-46 45-36 35≥)
0.005	$\chi^2=14.88$	4	K-S	(41≤ 40-31 30-21 20-11 10≥)
0.001	X ² = 41.44	3	K-S	()
0.150	$\chi^2=5.32$	3	K-S	(91≤ 90-61 60-31 30≥)
0.033	$\chi^2=8.74$	2	K-S	()
0.001	$\chi^2=15.99$	2	K-S	()
0.114	Z= -1.58	-	M-W	()
0.198	$\chi^2=4.67$	3	K-S	(% 76≤ 75-51 50-26 25≥)
0.012	Z= -2.50	-	M-W	()

:(6)

	(%)			(%)	
5	47.0	1.88	1	60.5	2.42
2	51.3	2.05	2	58.8	2.35
1	52.5	2.10	3	58.5	2.34
3	49.0	1.96	4	52.8	2.11
4	47.8	1.91	5	50.8	2.03
6	46.0	1.84	6	49.8	1.99
7	44.5	1.78	7	46.0	1.84
8	37.0	1.48	8	38.0	1.52
9	31.5	1.26	9	31.8	1.27

:(1)

:

0.100	66.6	3.33	.1
0.110	59.6	2.98	.2
0.060	78.2	3.91	.3
0.660	85.0	4.25	.4
0.110	72.6	3.63	.5
0.110	67.6	3.38	.6
0.110	50.6	2.53	.7
0.078	82.6	4.13	.8
0.100	62.0	3.10	.9
0.110	56.0	2.80	.10
0.077	90.0	4.50	.11
0.100	61.2	3.06	.12
0.061	81.4	4.07	.13
0.060	80.6	4.03	.14
0.081	86.6	4.33	.15
0.040	72.0	3.60	
0.100	66.4	3.32	.1
0.110	61.0	3.05	.2

...

:(1) :

0.110	59.2	2.96	.3
0.120	60.6	3.03	.4
0.140	50.0	2.50	.5
0.110	41.2	2.06	.6
0.095	48.2	2.41	.7
0.093	65.0	3.25	.8
0.073	93.4	4.67	.9
0.095	76.6	3.83	.10
0.110	85.6	4.28	.11
0.037	96.6	4.83	.12
0.077	41.2	2.06	.13
0.094	69.8	3.49	.14
0.10	60.0	3.00	.15
0.078	86.2	4.31	.16
0.91	88.4	4.42	.17
0.045	93.0	4.65	.18
0.036	96.2	4.81	.19
0.071	36.8	1.84	.20
0.038	68.8	3.44	
0.086	66.0	3.30	.1
0.120	74.0	3.70	.2
0.095	42.2	2.11	.3
0.062	74.6	3.73	.4
0.110	68.0	3.40	.5
0.079	89.4	4.47	.6
0.110	65.6	3.28	.7
0.089	31.4	1.57	.8
0.089	32.0	1.60	.9
0.110	38.6	1.93	.10
0.100	53.2	2.66	.11
0.069	93.2	4.66	.12
0.086	66.8	3.34	.13
0.091	78.4	3.92	.14

:(1) :

0.089	48.4	2.42	.15
0.093	78.0	3.90	.16
0.096	54.4	2.72	.17
0.078	80.6	4.03	.18
0.100	53.2	2.66	.19
0.140	49.6	2.48	.20
0.110	40.8	2.04	.21
0.089	31.6	1.58	.22
0.110	58.8	2.94	.23
0.085	33.0	1.65	.24
0.094	48.4	2.42	.25
0.130	53.2	2.66	.26
0.070	42.0	2.10	.27
0.037	57.2	2.86	
0.160	58.0	2.90	.1
0.120	40.0	2.00	.2
0.100	60.4	3.02	.3
0.100	66.8	3.34	.4
0.110	60.6	3.03	.5
0.054	38.6	1.93	.6
0.030	99.2	4.96	.7
0.110	50.6	2.53	.8
0.087	50.0	2.50	.9
0.120	72.4	3.62	.10
0.046	22.0	1.10	.11
0.083	78.6	3.93	.12
0.120	63.2	3.16	.13
0.082	94.2	4.71	.14
0.110	74.6	3.73	.15
0.069	94.4	4.72	.16
0.110	59.0	2.95	.17
0.038	63.7	3.18	

2004

1988

(...)

1997

Adhikarya R. 1994. *Strategic Extension Campaign, A Participatory-oriented Method of Agricultural Extension, A Case-Study of FAO's Experiences*, Rome, Italy.

1988

)

.127 – 107 26

(

Alonge A.J. and Martin R.A. 1995. Assessment of the Adoption of Sustainable Agriculture Practice: Implication for Agricultural Education, *Journal of Agricultural Education*, 36(3): 34-42. Retrieved March 23, 2004, from <http://pubs.aged.tamu.edu/jae/pdf/Vol36/36-03-34.pdf>.

1991

(1)

.1995

Bruening T. and Martin R.A. 1992. Farmer Perception of Soil and Water Conservation Issues: Implication to Agricultural and Extension Education. *Journal of Agricultural Education*, 33: 48-54.

2001

(1)

1990

Bruening T., Radhakrishna R. and Rollins T. 1992. Environmental Issues: Farmers Perceptions about Usefulness of Informational and Organizational Sources. *Journal of Agricultural Education*, 33: 34-36, 38-40.

1993

Brundtland Report, 1987. *Our Common Future*, Report of the 1987 World Commission on Environment and Development. Oxford University Press, Retrieved February 7, 2005 from http://www.aren.admin.ch/imperia/md/content/are/nachhaltigeentwicklung/brundtland_bericht.pdf.

1996

1991

EORG. 2002. The Attitudes of Europeans towards the Environment. The European Opinion. Research Group (EORG), Eurobarometer 58.0, Retrieved from europa.eu.int/comm/environment/barometer/barometer_2003_en.pdf.

2000

1985

Kaisar F.G., Wolfing S. and Fuhrer U. 1999. Environmental Attitude and Ecological Behavior. *Journal of Environmental Psychology*, 19:1-19.

. 181 – 147

(2)13

1997

Kang, J.T. and Song, H.K. 1984. Individual and Group Extension Teaching Methods. *Agricultural Extension A Reference Manual*, FAO, 2nd edition: p. 130-143.

1998

- Sekaran V. 1984. *Research Methods For Managers: A Skill-Building Approach*, John Wiley and Sons, Canada.
- Serageldin I. 1996. Making Development Sustainable, Finance and Development, World Bank, 33 (4).
- Springer D.W., Lauderda M. and Landuyt N 2000. An Opinion Survey of Teachers and Administrators Concerning TAAS and PEIMS Data in Texas Schools. Retrieved October 24, 2004 <http://www.window.state.txus/tspr/peitf/appendb1.html>.
- Vogel, Stefan. 1994. Environmental Attitudes and Behavior in the Agricultural Sector as Empirically Determined by Use of an Attitude Model, Discussion paper No. 32-W-94, Institute of Sustainable Economic Development, University of Natural Resources and Applied Life Sciences, Vienna. Retrieved February 8, 2005 from http://www.boku.ac.at/wpr/wpr_dp/dp-32.pdf.
- Kumuk T. and Akgungor S. 1996. The Role of Public Extension in Introducing Environment – Friendly Farming Methods in Turkey. *Journal of Agricultural Education and Extension*, 1, 4.
- Moser C. and Kalton G. 1979. *Survey Methods in Social Investigation*, 2^{ed} Edition, Heinemann Educational Books, London.
- Oppenheim A.N. 1978. *Questionnaire Design and Attitude Measurement*. Heinemann Educational Books Ltd., London.
- Papadakei-Klavdianov, Giasemi E. and Tsakiridoa E. 1999. Farmers' Attitudes in Relation to Integrated Pest Management and Environmental Issues : The Case of Greenhouse Producers in Greece. *Journal of Agricultural Education*, 6(1).
- Prochaska S. and Norland E.L.1998. Ohio Farmer Use of the Pesticide Label, *Journal of Extension*, 36(1). Retrieved May 12, 2004, from <http://www.joe.org/joe/1998february/rb2.html>.

Farm Producers' Attitudes to Rural Environmental Issues in the Jordan Valley: Implications to Agricultural Extension

Zeyad S. Alghlielat* and Ahmed Shukri Al-Rimawi**

ABSTRACT

This study aimed at analyzing environmental awareness and evaluating farm producers, and their sources of information. Data were collected from a multi-stage sample of 120 farmers using Likert scale. Cronbach coefficients (0.62-0.90) for all scales indicated their internal consistency. Parametric and non-parametric tests were used to analyze the data, depending on the normality of the distribution. Less than one third of the respondents were found to have high level of environmental awareness. Higher rates were associated with younger age, shorter experience, higher education, land ownership, and diversified farming. Jordan T.V., radio, and other farmers were rated highly as the most used and useful sources of information. The private agents and newspapers were rated highly as sources of information, but not as useful sources. Communication methods compatible with clients' needs and characteristics as well as the environmental dimension have to be considered in extension programming. Cooperation with research and NGOs to disseminate technically, and environmentally sound, and viable technologies is imminent.

KEYWORDS: Attitudes, environmental awareness, environment-friendly practices, sources of information, communication methods, economically feasible technologies.

* Faculty of Higher Studies, University of Jordan

** Department of Agricultural Economics and Agribusiness, Faculty of Agriculture, University of Jordan. Received on 23/2/2005 and Accepted for Publication on 18/7/2005.