

Time Duration Variance in Canadian Diploma In Agriculture Education Programs

John R. Peters

Abstract

Across Canada 99 Diploma in Agriculture programs are offered at 19 institutions belonging to the Canadian Association of Diploma in Agriculture Programs. The length of these programs varies from a low of 45 weeks offered in a 1.5 year time frame to a high of 103 weeks offered over a 3 year time frame. When the length of the programs is measured in contact hours it varies from 1400 to 2955 hours. The coefficient of variation between programs ranges from 1.47 to 13.61 percent.

Introduction

According to Stelmaschuk¹ the first post secondary, non-baccalaureate agriculture training institution in Canada was established at St. Anne's (now St. Anne de la Pocatiere), Quebec in 1859. A prospectus stated that the object of the School was to train sons of land-owners to become farmers on their own account. In 1874 the first English language Diploma in Agriculture program was established in Guelph, Ont. In time similar programs were established in the three prairie provinces, in Nova Scotia and in British Columbia.

In 1979-80 Paul Stelmaschuk, then Director of the School of Agriculture at the University of Manitoba, gathered information on as many Canadian, post-secondary institutions offering non-baccalaureate agriculture programs as possible. He concluded that 43 institutions were engaged in this type of education in Canada offering 148 programs. However, if programs of less than 2 years duration were excluded then Canada had 34 such institutions offering 130 programs.

The vast majority of these programs are offered at 19 institutions in 7 provinces, all of which belong to the Canadian Association of Diploma in Agriculture Programs (CADAP). Enrollment trends at these institutions from 1983 to 1987 have been previously reported by Peters².

The great diversity of programs offered, not only across Canada but also within member institutions of CADAP, and the variability between programs, particularly with respect to time duration, pointed to the need for some concrete information on this matter. Accordingly, all 19 member institutions were canvassed in 1989 the results of which are reported herein.

It should be noted that 16 of the 19 member institutions offer their programs in the English language whereas three offer theirs in french. The three are at La Pocatiere and St. Peters is director of the School of Agriculture, Room 141, Kirk Hall, University of Saskatchewan, Saskatoon, Sask. S7N 0W0

¹ Stelmaschuk, Paul, 1980. Agriculture Education in Canada (Post Secondary, non-Baccalaureate), Unpublished report, School of Agriculture, University of Manitoba.

² Peters, John R., 1989. Enrollment Trends: Canadian Diploma in Agriculture Programs 1983-87, NACTA Journal, Vol. 33, pages 19-22.

Table 1. Types of Diploma Level Agriculture Production Programs Offered at 19 Canadian Post-secondary Educational Institutions.

Member Institutions	Agriculture Production Programs	Ag Business (Management)	Ag Engineering (Mechanization)	Ag Production (Technology)	Animal Production (Mgmt., Technology)	Crop Production (Management)	Dairy Production (Technology)	Farm & Ranch Management	Farm Finance	Farm Operators & Mgrs. (Technology)	General Agriculture	Gestion et expl. d'entreprise agricole	Horticulture (Vegetable Production)	Irrigation Production	Meat Production	Ranch Horsemanship
FVC			X													
NLC							X									X
FC	X		X	X												
LC	X	X	X	X							X					
OC			X									X				
LCC				X	X			X	X				X			
US				X	X				X							
UM	X			X	X					X						
RCAT				X	X											
CCAT	X															
OAC									X							
KCAT				X	X		X						X			
NLCAT				X			X									
ACAT			X													
NC					X		X						X		X	
ITASN												X				
ITALP												X				
WCCNB			X													
NSAC		X	X	X					X							

Member Institutions:

Canadian Association of Diploma in Agriculture Programs

FVC	Fraser Valley College, Abbotsford, BC
NLC	Northern Lights College, Dawson Creek, BC
FC	Fairview College, Fairview, Alta.
LC	Lakeland College, Vermillion, Alta.
OC	Olds College, Olds, Alta.
LCC	Lethbridge Community College, Lethbridge, Alta.
US	University of Saskatchewan, Saskatoon, SK
UM	University of Manitoba, Winnipeg, MB
RCAT	Ridgetown College of Agriculture Tech., Ridgetown, ON
CCAT	Centralia College of Agriculture Tech., Huron Park, ON
OAC	Ontario Agriculture College, Guelph ON
KCAT	Kemptville College of Agriculture Technology, Keptville, ON
NLCAT	New Liskeard College of Agr. Tech., New Liskeard, ON
ACAT	Alfred College of Agriculture Technology, Alfred, ON
MC	Macdonald College, Ste. Anne de Bellevue, PQ
ITASN	Institut de Technologie Agricole, St. Nyacinthe, PQ
ITALP	Institut de Technologie Agricole, La Pocatiere, PQ
WCCNB	Woodstock Community College, Woodstock, NB
NSAC	Novia Scotia Agriculture College, Truro, NS

Hyacinthe in the province of Quebec and at Alfred located in eastern Ontario.

Types of Agriculture Programs

In 1989-90 the 19 member institutions of CADAP offered some 99 agriculturally related programs. For the purpose of reporting on this many programs each institution was asked to place their programs into one of 7 categories (Table 3). Almost half of these programs (48) are in the agriculture production category. An additional 15 are in the Agri-Business category, 11 in Horticulture, 7 in Agricultural Mechanics, 6 in Animal Health and 4 in Equine Science, leaving 8 in the "other" category.

Table 1. Types of Diploma Level Programs, Other Than Agriculture Production, Offered at Canadian Educational Institutions Offering Diploma in Agriculture Programs.

Programs by Category	Member Institutions												
	FC	LC	OC	LCC	RCAT	CCAT	OAC	NLCAT	KCAT	ACAT	ITASN	IT'ALP	NSAC
Agri-business and Service													
Agri-business (Mgmt., Tech.)		X	X		X		X						X
Agricultural Technology													X
Biology Lab. Technology													X
Chemistry Lab. Technology													X
Irrigation Technology				X									
Land Resource Management			X										
Techniques de gestion conseil												X	
Techniques des sols												X	
Zootecnologie												X	X
Agriculture Mechanics													
Agric. Machinery (Mechanics)		X	X	X									X
Agricultural Engineering				X									
Agricultural Systems		X											
Genie Rural										X			
Animal Health													
Animal Health Technology	X	X	X			X							X
Herd Health Technology		X											
Equine and Farrier Science													
Equine Science (Technology)			X				X					X	
Techniques equines													
Western Horsemanship		X											
Horticulture													
Fruit and Vegetables							X						
Hort. legume et fruitiere												X	
Horticulture			X										
Horticulture Ornamental												X	
Landscape Horticulture													X
Ornamental Horticulture					X		X	X					
Techn. de productions vegetales												X	
Trufgrass Management	X						X						
Miscellaneous													
Food Service Management					X			X	X				
Land Agent			X										
Quality Control - Laboratory				X									
Techn. alimentaire production												X	
Techn. alimentaire produits laitiers												X	
Techn. alim. controle de la qual. et dev.												X	

See Table 1 for interpretation of institutional codes.

Most of the programs (77) are of 2 academic years duration although 7 agriculture production programs and a number of other programs (15) are of 2.5 to 3 academic years duration. Three programs at the University of Saskatchewan are offered in 3 short academic years (mid Oct. to beginning of April) and as far as time duration is concerned are most appropriately placed in the "2 academic years" group.

Agriculture Production Programs

The names assigned to the various agriculture production programs varies considerably from institution to institution with many programs having similar objectives but different names; for example one institution may call their program Animal Production whereas another institution may call it Animal Management and yet another one Animal Technology. Accordingly, these programs have been grouped under one heading (Table 1). In fact some institutions listed more than one program with similar names in a certain category. These show up as a single "X" in either Table 1 or 2 and hence the total number of programs listed in Tables 1 and 2 does not match the totals indicated in Table 3.

Some institutions have listed the Agri-business program in Category 1, Agriculture Production, whereas others have listed such a program under Category 2, Agri-business. The difference between the two categories is that Category 1 is reserved for those programs whose primary objective is farm management and production (farming) whereas programs in Category 2 are those designed for individuals looking for off-farm employment. Institutions were free to place their programs in whichever category they thought most appropriate.

Most institutions offer more than one agriculture production program. All of them offer studies in crop and animal production although in some cases, e.g.: Olds College, both areas are covered under the general topic of Agriculture Production. The "Gestion et exploitation d'entreprise agricole" programs offered at the two french language institutions in Quebec fall into the general category of agriculture production and management. Although the Northern Lights College at Dawson Creek, British Columbia is included in Table 1 it should be noted that the two Agriculture Production programs of that institution were discontinued in 1989.

Other Programs

Eight CADAP institutions offer at least one Agri-business program with the Nova Scotia Agricultural College offering as many as four. As mentioned earlier these programs are primarily designed to train individuals for off-farm jobs in the agri-business field.

Five institutions offer programs in the general area of agricultural mechanics. Although the primary objective of these programs is generally to train individuals for employment in the farm machinery industry, many students of these programs return to the home farm after graduation.

Five institutions offer Animal Health programs. Graduates of these programs generally find employment as veterinary technicians or in other animal health related fields.

Only four institutions offer programs in Equine Science. No doubt the high cost of this type of program makes it

Table 3. Time Duration(#) in Weeks and Contact Hours of Canadian Diploma in Agriculture Programs by Program Categories.

Program Categories	Number of		Time Duration - Weeks				Time Duration - Contact Hours			
	Institutions	Programs	Min.	Max.	Ave.	C.V.	Min.	Max.	Ave.	C.V.
Agri. Production										
2 year programs *	15	41	52	68	60.2	8.53%	1416	2392	1668.8	11.14%
3 year programs *	4 **	7	83	103	90.1	9.86%	2700	2955	2772.9	3.5%
Agri-Business										
2 year programs	6	9	52	64	60.4	5.79%	1425	2077	1683.6	11.20%
3 year programs	4	6	78	99	94.5	8.15%	1974	2400	2158.3	6.32%
Agri. Mechanics										
2 year programs	5	6	45	68	59.3	13.61%	1520	2000	1784.0	8.63%
3 year programs	1	1			99.0	n.a.			2163.0	n.a.
Animal Health										
2 year programs	4	5	52	67	60.8	9.03%	1560	1854	1714.8	7.46%
3 year programs	1	1			102.9	n.a.			2775.0	n.a.
Equine Science										
2 year programs	3	3	52	64	58.7	8.50%	1600	1800	1693.3	4.85%
3 year programs	1	1			99.0	n.a.			2187.0	n.a.
Horticulture										
2 year programs	5	8	52	68	58.3	8.08%	1400	1959	1576.1	12.05%
3 year programs	2	3	99	99	99.0	n.a.	2112	2188	2146.0	1.47%
Other										
2 year programs	4	5	52	60	57.0	5.82%	1460	1695	1578.8	6.91%
3 year programs	1	3	99	99	99.0	n.a.	2113	2113	2113.0	n.a.

Time duration for each institution is an indication of the number of weeks or the minimum number of contact hours required to satisfy the institutional requirements of the Diploma program. The min/max. columns indicate the range between institutions not the range of programs within an institution.

* Includes all programs of institutions with more than 1 Agri. Production program.

** Includes MacDonald College's program of 2.5 years but excludes the University of Saskatchewan's program of three short years.

difficult for more institutions to establish such a program.

Eight institutions offer programs in Horticulture. Some of these programs could also be placed in the Agriculture Production category. Horticulture students who do not become involved in the horticulture production industry generally find employment in the landscape, florist or turfgrass industries.

Other agriculturally related programs, 8 in total, are offered at 6 member institutions of CADAP. These programs tend to meet the requirements of very specific job markets in the province or region where they are offered.

It should be noted that this report deals with member institutions of the Canadian Association of Diploma in Agriculture only. In each province there are institutions which offer programs similar to the ones listed in Table 2 but who do not belong to CADAP. For example, in Saskatchewan a technical institute in Saskatoon offers a Farm Machinery program as well as one in Veterinary Technology. Similar examples could be cited for other provinces.

Time Duration of Diploma

The time duration of each diploma program was measured in two different ways; in weeks of instruction, including examination weeks, and in contact hours. When measuring the length of a program in contact hours, institutions were asked to estimate the minimum number of contact hours required for a student to meet the graduation requirements. Furthermore, each institution was asked to convert all contact hours to a 60 minute base even though in many institutions contact hours are of shorter duration. Whether measured in weeks or contact hours time duration includes exami-

nation periods. In the case of the three agriculture production programs in the province of Quebec a substantial summer practicum has been included in the time duration calculations.

Most diploma level programs are of 2 academic years' duration. However, a number of Canadian institutions list three year programs. Accordingly, for the purpose of analyzing the variability between programs the 2 and 3 year programs were analyzed separately (Table 3).

The coefficient of variation (CV) of the length of agriculture production programs when measured in weeks is 8.53 and 9.86 percent for the 2 and 3 year programs, respectively. When the time duration of these programs is measured in contact hours the CV's are 11.14 and 3.50 percent, respectively. Although this variability is reasonably low it should be noted that the longest 2 year program is 16 weeks longer than the shortest program, or 30.8% longer. When these programs are measured in contact hours, the longest program (2392 C.H.) has a requirement which is 68.9% higher than the shortest program (1416 C.H.). The differences between shortest and longest 3 year programs are not nearly as pronounced. When measured in weeks the longest program is 24.1% longer than the shortest program and when measured in contact hours the difference is only 9.4%.

The variability of program length between programs in categories other than agriculture production is similar in magnitude, ranging from a low CV of 5.79% to a high of 13.61% when time duration is measured in weeks. The relatively high CV of 13.61% between Agricultural Mechanics programs is due to a 1.5 year program offered at Olds

Peters (continued bottom of next page).

An Agricultural College in Iraq as Observed By an American Soil Scientist

Duane T. Gardiner

Abstract

This paper describes observations by an American agricultural scientist in Iraq. Conditions and practices at Mosul University College of Agriculture and Forestry are described and contrasted to those at American colleges.

The multi-national war against Iraq focused world-wide attention on Iraq as seen through the eyes of western military and political experts. This paper describes an agricultural college in Iraq as seen through the eyes of an American soil scientist. Because an institution such as a college is best studied in context, peripheral observations are also offered. What is the state of agricultural science in Iraq, and how is it reflected in the quality and quantity of food available to the consumer? What academic pursuits occur in an Arab police-state where portraits of Saddam Hussein gaze down in every classroom and office? What and why do agriculture students study? How do faculty describe their roles, their dreams, their standing among scientists in the international community? These questions I considered during a three-week consultation to the Soil Science Department of Mosul University in May 1990, during the peaceful hiatus between the Iran-Iraq war and the Iraqi invasion of Kuwait.

Mosul University is the academic hub for about a million Northern Iraqis. Spilling onto the site of the ancient city

Gardiner is an assistant professor of Soil Science at Texas A&I University, Campus Box 156, Kingsville, TX 78363. His research has explored relations between plant nutrition and environmental quality. By invitation of the government of Iraq he visited Mosul University in May 1990.

Peters (continued from previous page).

College being included in this analysis. Nevertheless, the Olds program requires more contact hours than a similar 2 year program offered at Lethbridge.

The variabilities of program length between non-production programs when measured in contact hours are similar to those of the agricultural production programs, ranging from a low CV of 1.47% for three 3 year Horticulture programs offered at 2 institutions to a high CV of 12.05% for 7 two year Horticulture programs offered at 5 institutions. In no case, however, is the range between the minimum and maximum contact hours required as great as for the 2 year agriculture production programs.

Conclusions

Although the coefficients of variation between most programs is relatively low there seems to be reason for concern when the contact hour requirement of the shortest diploma in agriculture production program is barely 60 percent that of the longest program. Although such variation may not be of great concern in the local area it might create problems when employers of diploma in agriculture gradu-

ates compare programs across Canada.

Ninevah, the modern city Mosul is overwhelmingly Moslem; but, Iraq's greatest concentration of Arab Christians and Kurds lives there. The hot, dry climate reminds one of Phoenix. The dress and customs remind one of an Indiana Jones movie. The presence of heavily armed militia patrolling city streets disturbs the unsuspecting westerner. The preponderance of ten-year-old cars with cracked windshields and worn-out air conditioners attest that the war-drained economy had been burgeoning ten years ago.

The Food Situation

The state of agricultural science in Iraq in May, 1990, can be best appreciated in light of the national food situation. Barley, Iraq's principal crop, covered vast plains where farmers drove John Deere combines over short, weedless stands to harvest 400 kg per hectare (6 bushels per acre). The sheep of Bedouins followed the harvesters, grazing stubble on one farm, then another. Some barley acreage had recently benefitted from a Chinese sprinkler irrigation project. Irrigated vegetable farms were also common, often run by polygamist families with an abundant labor force.

Iraq had no western-style supermarkets, no western hamburger franchises, and a limited restaurant market with severe restrictions on female patronage. Iraqi consumers, believing chicken is "safer," reluctantly bought the staple meat (lamb) from unrefrigerated shops. Nuts, candies, spices were ubiquitous in the marketplace. Milk was imported in powdered form, or could be purchased in bottles setting out

ates compare programs across Canada.

The great diversity of names given to programs of similar objectives could likewise create some problems when graduates move from region to region or province to province in search of employment. The question could well be asked what is the difference between "agricultural mechanization", "agricultural mechanics" and "agricultural machinery". Similarly, what is the difference between "animal science", "animal production" and "livestock production" all of which are placed in the category of agriculture production. The inconsistency of some institutions offering Agri-business programs which are geared to agriculture production whereas other institutions focus such programs towards employment opportunities in off-farm, agri-business establishments should be addressed.

Finally, it should be noted that the number of contact hours assigned to the three year agricultural production programs include a substantial number of hours generated by on farm practicums. In other cases hours accumulated during required practicums are not included. Agreement is required on how practicums should be treated when measuring time duration of programs.