

SUMMARY REPORT

February 2012

UNIVERSITY
of GUELPH

CHANGING LIVES
IMPROVING LIFE

Planning for Tomorrow for OAC: Input From Industry

Prepared for



Guelph • Alfred • Kemptville • Ridgetown

Prepared by

JRG CONSULTING GROUP

a division of 1260977 Ontario Inc.

Guelph, Ontario

(519) 836-1860

***Collaborating for Success in the
Agriculture and Food Sector***

COMMISSIONED RESEARCH SHOWS STRONG DEMAND FOR GRADUATES TO SERVE ONTARIO AGRICULTURE AND FOOD SECTOR

First time College has polled industry in Ontario about HR needs

As Ontario's agriculture and food industry has emerged as the single most important economic driver in the province, a survey of over 100 agriculture and food processing organizations has provided a snapshot of hiring trends and demands in Ontario's largest employment sector.

Commissioned by the Ontario Agricultural College (OAC), the assessment of human resource needs indicates that **employers in Ontario's agriculture and food sector will increase the number of hires directly from university over the next few years by 10 to 20% on average**. Ontario has the most diverse agricultural industry in Canada, producing more than 200 commodities and the largest food processing industry in Canada, with more than 3,000 food processing establishments. The sector contributes more than \$33 billion annually to Ontario's GDP (including \$9 billion in exports) and currently sustains more than 200,000 jobs.

The survey and subsequent findings were done by JRG Consulting Group. The survey was taken from September through November, 2011, and included 25 food processing firms and 77 firms and organizations representing the agricultural sector. The latter includes crop input supply dealers, feed manufacturing and sales, government agencies, grain companies and dealers, greenhouse vegetable producers, landscape horticulture / floriculture companies, life science companies, supporting organizations, and financial services. The study was intended to develop a better understanding of the demand for OAC graduates and to capture feedback from industry about the college's graduates.

The survey examined employer demand at the diploma, bachelor, masters and doctorate levels in agriculture and in food processing. In each sector, and at each level, organizations indicated strong demand for the skills and training that OAC graduates bring to the workplace. **The survey revealed the large gap that currently exists in Ontario in the supply of graduates trained in agriculture and food programs and the difficulties employers are having in finding suitably trained graduates**. Positions in the sector ranged from sales and field marketing through skilled production positions to financial analysts and researchers. **60% of respondents indicated that they had a preference for formal training in agriculture and food when hiring**. Respondents indicated that it was important for employees to understand the sector, and that as employers they were looking for experience in subject matter areas such as crop science, animal sciences, genetics, laboratory sciences, etc.

Respondents indicated that OAC delivered very well in these technical and science-based areas. The skills set supplied align with the core strength of OAC, including relevant scientific knowledge,

technical and analytical skills and formal training in agriculture and food. Desired soft skills were the fourth most frequently mentioned skill area required.

Across all sectors, industry is looking for a specific set of skills when they hire graduates from college and university. Soft skills are sought when hiring, with the understanding that the candidate has the necessary technical skills to accomplish the given work. Soft skills include communication, teamwork and presentation skills, as well as organization and time management, multitasking and practicality.

Realizing that this employer demand for soft skills has been growing for some time, in the past year OAC has conducted an extensive curriculum review. New course offerings and revisions to the delivery of existing programs will result in students having more opportunities for team work, formal presentations and public speaking. Additionally, the OAC Dean's Office is supporting the revival of a student agricultural communicators club, part of a North American-wide network that boosts speaking and writing skills, enhances student experience and contributes to industry knowledge.

Established in 1874, and part of the nucleus that formed the renowned University of Guelph, OAC is an integral part of Ontario's agriculture and food sector, as it supplies new ideas, research solutions and a steady stream of graduates that can operate in these dynamic and technology-driven industries. OAC offers graduate, undergraduate, diploma, certificate and apprenticeship programs at four campuses (Guelph, Alfred, Kemptville, Ridgeway) and on-line. Highly qualified faculty and staff contribute to the success of the organization, its graduates, and by extension to the success of the local and national economies.

The JRG Consulting Group was commissioned by OAC to assist them in developing this survey. The firm provides consulting services in the areas of business strategy, feasibility analysis, economic analysis, competitiveness reviews, sector profiles, and agricultural policy. JRG has provided consulting services in most commodity sectors to diverse range of clients. Principal John Groenewegen received his PhD from the University of Minnesota in agricultural and applied economics, and completed his M.Sc. and B. Sc. (Agr) in agricultural economics at OAC. Before consulting, he was an agricultural economist at Agriculture and Agri-Food Canada and at the USDA.

A steering committee was established by Robert Gordon, the Dean of OAC, to provide guidance and support throughout the project. The Committee included: Rene Van Acker, Associate Dean (External Relations); Jonathan Schmidt, Associate Dean (Academic), Brian Little (OAC Alumni Foundation), and Tom Sawyer (OAC Alumni Association).

The project was funded by financial and in-kind support from the Agronomy Company of Canada, Crop Life Canada, Farm Credit Canada, Pioneer Canada, RBC-Royal Bank, the Workforce Planning Board of Waterloo Wellington Dufferin, the OAC Alumni Association, and the OAC Alumni Foundation.

PLANNING FOR TOMORROW FOR OAC: INPUT FROM THE AGRICULTURE AND FOOD SECTOR: KEY FINDINGS

PROJECT CONTEXT

The agriculture and food sector is an important part of Ontario's economy, generating an estimated \$38 billion of GDP. This GDP measure accounts for the upstream activities in primary agriculture and the various suppliers of inputs into the agriculture and food sector's value chain. The employment base of the sector is over 200,000, before considering food distribution, food retailing and food service operations. The sector operates in a dynamic and global context and competitiveness is in many ways shaped by productivity advances. The Ontario Agricultural College (OAC) is an integral part of Ontario's this dynamic and technology-driven sector, as it supplies new ideas, research findings, solutions and a steady stream of graduates. Highly qualified individuals with the necessary skill set within the agriculture and food businesses contribute to the success of the organization, as well as to the success of the sector. People make the difference as they interact with customers and offer science-based solutions within the sector.

OAC can best perform its role as a provider of human capital (e.g., graduates) by understanding the needs of the Ontario agriculture and food sector. OAC with support from the OAC Alumni Foundation and the OAC Alumni Association and some industry partners commissioned the JRG Consulting Group to further this understanding. The primary objective of this effort was to: *"Provide an assessment of employer human resource recruitment requirements within the broader Ontario agriculture and food sector for skilled personnel by broad discipline areas applicable to OAC offerings"*.

In more general terms the project focus was to develop a better understanding of the demand for OAC graduates and to capture feedback from the agriculture and food sector on the supply offering (of graduates) from OAC. A steering committee provided overall guidance on this project.

The steering committee was established by Robert Gordon, the Dean of OAC, to provide guidance and support throughout the project. The Committee included: Rene Van Acker, Associate Dean (External Relations); Jonathan Schmidt, Associate Dean (Academic), Brian Little (OAC Alumni Foundation), and Tom Sawyer (OAC Alumni Association).

The project was funded by financial and in-kind support from the Agronomy Company of Canada, Crop Life Canada, Farm Credit Canada, Pioneer Canada, RBC-Royal Bank, the Workforce Planning Board of Waterloo Wellington Dufferin, the OAC Alumni Association, and the OAC Alumni Foundation.

An overall profile of the Ontario agriculture and food sector was developed to portray its size and scope, including the \$7.9 billion purchases of inputs by the farm sector, the \$10 billion of farm sector sales to marketers and food processors, the \$37.6 billion in sales by Ontario's food manufacturing sector and the \$9.3 billion in exports of commodities and prepared food products. Life science companies, R&D organizations, supporting organizations and government agencies are also important parts of the overall agriculture and food sector. The food processing sector with a post secondary employment base of 27,030 employees is a large and integral part, and due to its size and significance is

highlighted separately (in this summary) from the remainder of the agriculture and food sector, the former with a post secondary employment base of 8,045 (excluding 25,635 in the farm sector). The agriculture sector includes (1) crop input supply dealers, (2) feed manufacturing & sales, (3) government agencies, (4) grain companies & dealers, (5) greenhouse vegetable producers, (6) landscape horticulture and floriculture suppliers, (7) life science companies, (8) supporting organizations, and (9) financial services.

Secondary data available through Statistics Canada indicated that 26% of employees in the farm sector had post secondary education, 33% in the food processing sector, and 39% of workers in other parts of the agriculture and food sector had post secondary education. Throughout the sector, 20% have a college education as their highest level of education attained, followed by 12% at the Bachelors level. In the farm sector, 26% of those with post secondary education received training in the area of agriculture, and this was 33% in the non-food processing part of the non-farm component of the agriculture and food sector. A sampling plan was developed to cover the diverse agriculture and food sector using just over 100 personal interviews. Our final sample included 25 food processing firms and 77 firms and organizations representing the remainder of the sector. These interviews were guided by a detailed questionnaire that probed many areas using predominately open-ended questions without any aided responses categories. Interviews occurred over the September to early November 2011 period. Analysis and reporting of results to the Steering Committee occurred in late November with reporting to OAC partners in December.

PREFERENCE FOR FORMAL TRAINING IN AGRICULTURE AND FOOD

OAC can be viewed as a preeminent supplier of post-secondary training in programs in agriculture, food, rural communities and the environment. This is important to the industry as 60% of respondents indicated that they had a preference for formal training in agriculture and food when hiring, and another 30% indicated that this preference depended on the job position they were filling. Respondents indicated that it was important for employees to have training and a background in agriculture and food, that they needed to understand the sector and that as employers they were looking for experience in subject matter areas such as crop science, animal sciences, genetics, food science, laboratory sciences, etc. A minority of interviewees indicated that for some positions, having a farm background was sufficient, and that formal training was not a requirement.

A PREFERENCE FOR FORMAL TRAINING IN AGRICULTURE AND FOOD

Sector	Response		
	Yes	Depends	No
Food processing	60%	16%	24%
Other agri-food	60%	34%	5%
Total	60%	30%	10%

STRONG DEMAND FOR OAC GRADUATES BY THE ONTARIO AGRICULTURE AND FOOD SECTOR

Project findings indicate that (1) overall demand for new hires (directly from university) will increase by 10% to 20% over the next few years, and (2) the demand potential for OAC graduates exceeds the supply offering. This was first noted when respondents indicated that many more of their job positions could have been filled by OAC graduates. The sample indicated that across the agriculture and food sector, 77% of post secondary positions could be filled by OAC graduates, while OAC graduates currently occupy only 12% of these positions, which is higher at 51% in the part of the sector that does not include food processing.

OAC SHARE OF POST SECONDARY EMPLOYEES: ACTUAL AND POTENTIAL

Sector	Employees with Post Secondary Education	Could have Been Recruited From OAC	Potential OAC Share	Actually Came from OAC	OAC Share of Potential
Food processing	7,591	8,288	109%	55	1%
Other agri-food	3,620	1,791	49%	916	51%
Total	13,520	10,349	77%	1,278	12%

When asked what positions could be filled by OAC graduates the most frequent responses were:

- ❑ Sales/field marketing/services (by 41% of the firms surveyed);
- ❑ Supervisors/managers (by 38% of the firms surveyed);
- ❑ Operators/skilled workers/Production positions(by 38% of the firms surveyed);
- ❑ Financial positions/accountants (by 18% of the firms surveyed);
- ❑ Analysts/researchers/ research assistants/ (by 13% of the firms surveyed); and
- ❑ Agronomists (by 11% of the firms surveyed).

Of our survey sample, 64 organizations indicated that they would be hiring at the diploma level. In the agriculture area, including supporting organizations and government, 50 firms (out of a sample of 77) indicated they require OAC diploma graduates and that OAC would account for 60% of their hires. Landscape horticulture, greenhouse vegetable production and crop input supply/grain handling and marketing are the sectors with the largest requirements. **Extrapolating survey values to an Ontario-wide basis results in a stated requirement of approximately 500 recruits from OAC regional campus diploma programs. Currently, OAC campuses supply approximately 400 college graduates each year suggesting that demand substantially exceeds supply, and this is before accounting for the proportion of graduates that return the family farming business.**

Expected Annual Hires by Survey Respondents – Diploma Level and OAC Share

Sector	Diploma Response			OAC Response			OAC Share		
	Firms Hiring	Hires	Hires per Firm	Firms Hiring	Hires	Hires per Firm	Firms Sampled	Firms Hiring	Hires
Food processing	14	49	3.5	10	12	1.2	40%	71%	25%
Other agri-food	50	98	2.0	32	58	1.8	42%	64%	60%
Total	64	147	2.3	42	71	1.7	41%	66%	48%

In the food processing sector, a subset of the sampled firms (14) indicated that they would hire diploma graduates each year, however only 25% of their diploma level hires would be sourced from OAC campuses. Extrapolation of these results to the provincial level indicated a requirement of between 50 and 450 diploma graduates by food processors. The range in results is based on whether extrapolation was based on using total Ontario workforce represented by our sample, or using total diploma level graduates represented by our sample, with our sample based on diploma graduates producing the upper level in the range.

At the Bachelors (Undergraduate) level, 13 food processing firms indicated they would be hiring directly from universities, with eight firms indicating that they would be looking to OAC for graduates. These jobs were in positions such as supervision, sales and marketing, lab technicians, quality control, health and safety, micro-biology, and product development. **Extrapolating these results to the Ontario-wide level indicates an annual requirement of between 54 and 88 graduates (undergraduate level) for the food processing sector required each year from OAC’s food science program. The food science program currently graduates approximately 30 students each year at the Bachelors level, showing that there is a substantive gap between supply and demand by Ontario’s food processing industry.**

EXPECTED ANNUAL HIRES BY SURVEY RESPONDENTS – BACHELORS AND OAC SHARE

Sector	Bachelors Response			OAC Response			OAC Share		
	Firms Hiring	Hires	Hires per Firm	Firms Hiring	Hires	Hires per Firm	Firms Sampled	Firms Hiring	Hires
Food processing	13	60	4.6	8	13	1.7	32%	62%	22%
Other agri-food	53	355	6.7	43	100	2.3	56%	81%	28%
Total	66	415	6.3	51	113	2.2	50%	77%	27%

In the rest of the agriculture and food sector and at the undergraduate level, our survey respondents indicated that they are looking to hire 100 OAC undergraduates per year, which is only 28% of their required hires at the Bachelors level. Extrapolating these findings to the Ontario-wide level suggests a demand of between 265 and 330 graduates each year, and this is before considering the number of OAC graduates that apply their skills back on the family farm. **Currently, there are approximately 100 OAC graduates in the agriculture area each year suggesting that demand in Ontario is 3 times supply for agricultural graduates at the Bachelors level.**

The surveyed organizations results indicated a demand for graduates at the Masters level of 15 graduates per annum, which were primarily in the government sector. Extrapolated results indicate an annual requirement of between 37 and over 100 Masters level graduates per annum. At the PhD level the province wide demand according to the surveyed industries is under 5 per year, with the survey indicating that PhD's are requirement in the feed nutrition and life sciences area. However, our interviewees did clarify that their responses were in regard to the Ontario market demand and that they see that at the PhD level the market place is global, with US and global headquarters looking at campuses from around the globe, including OAC to fill positions.

Consistent with our above findings of an excess demand for OAC graduates at the Masters level, relative to the supply availability, the survey results indicate that at least 37% of the organizations surveyed had difficulty finding recruits that should be supplied by OAC. The crop input supply sector, the feed sector, and government were most affected in this regard and within these sectors, sales and marketing positions were where there was most demand for graduates trained at Masters level and where firms had most difficulty finding graduates.

DIFFICULTY IN FINDING RECRUITS THAT SHOULD BE COMING FROM OAC

Sector	Response		
	Yes	No	No Response
Food processing	28%	56%	16%
Other agri-food	40%	47%	13%
Total	37%	49%	14%

DEMAND FOR OAC GRADUATES - SKILLS

The survey revealed that the agriculture and food industry in Ontario is looking for a specific set of skills when they hire graduates. Soft skills are sought when hiring, with the understanding that the candidate has the necessary technical skills offered by a specific program. In this regard it is important to note that interviewees thought that OAC delivered very well in terms of the technical training of their graduates but that they desired more soft skills training in addition. "Soft skills" in the area of communication, teamwork and presentation skills was the most frequently mentioned skill area sought, followed by the combined category of organization, time management, multitasking, and practicality. These two skill areas were then followed by the candidate having the necessary technical and analytical skills.

The skills set supplied align with the core strength of OAC, which includes knowledge and formal training in agriculture and food, which is followed by scientific knowledge in core areas and technical and analytical skills. Respondents indicated that OAC delivered very well in these technical and science based area.

Respondents felt that as they prepare their organizations for the future they will be more reliant on skills areas such as: (1) staying up to date on technology and changes in technology, (2) communication/teamwork/presentation skills, (3) knowing where to find answers, (4) business management skills, and (5) sales skills. Many of the job positions in the agriculture and food sector are focused on providing science- and technology-based solutions in agricultural production. The skills set being sought are those identified as allowing agriculture and food businesses to remain relevant to their customers.

NEEDS AND OPPORTUNITIES

Via this study, our interaction with industry indicates that there are significant unmet needs in the agriculture and food sector in Ontario in regard to the number of students being trained at diploma, undergraduate and graduate level in agriculture or food programs. The Ontario agriculture and food sector is signaling that their requirement for OAC graduates is substantively larger than OAC's current supply offering.

For more detail on the study, please contact:

Rene Van Acker, Associate Dean (External) OAC

vanacker@uoguelph.ca