

Introduction & Need for Innovation

While North Carolina has the 8th highest population of military veterans in the nation, there is a lack of targeted long-term, hands-on agricultural training programs to prepare them to own and manage farms. Developing a registered agricultural apprenticeship program addresses this training need while also allowing veterans to utilize their GI Bill benefits for additional income. Host farm employers also benefit from gaining a committed employee who is eager to learn. This apprenticeship is North Carolina's first registered apprenticeship program for military veterans that pairs Agriculture and the Defense sector, two of North Carolina's top industries.

How it Works

Registered apprenticeship programs help recruit and develop a diverse highly skilled workforce, increase farm productivity, allow employers to participate in networking and training opportunities, and increase job retention. The five main components of a registered agricultural apprenticeship program are below:

01

Business involvement: The farms that employ & mentor apprentices are the foundation of the program. Farms are chosen through an application and interview process.

02

Structured on the Job training: Apprentices are paid employees of the host farms so they "earn while they learn" by working 2,000 OJT Hours

03

Relevant Related Instruction: Apprentices complete 144 hours of education delivered by institutions on a list of approved related instruction providers.

04

Rewards for Skill Gains: The apprentices receive pay increases after each 6-month period or when they meet certain benchmarks for skill competencies.

05

Recognized Credentials: Upon completion, apprentices will have earned an industry-recognized credential.

Core Competency Tracks	Hours	Upon completion of the program apprentices should be competent in performing the following skills:
1. Basic Livestock Production	800 OJT Hours 36 RI Hours	A. Collect and record growth, production, and environmental data.
		B. Practice the breeding or raising of stock, such as cattle, swine, poultry, or honeybees, using recognized breeding practices to ensure stock improvement.
		C. Coordinate the selection and maintenance of brood stock.
2. Basic crop or Plant Production OR	800 OJT Hours 36 RI Hours	A. Collect and record growth, production, and environmental data.
		B. Participate in or Conduct crop production operations, such as planning, tilling, planting, fertilizing, cultivating, spraying, and harvesting.
		C. Determine plant growing conditions, such as greenhouses, hydroponics, or natural settings, and set planting, irrigation, and care schedules.
3. Any combination of livestock and crop/plant production	800 OJT Hours 36 RI Hours	D. Grow horticultural plants for sale to trade or retail customers, for display or exhibition, or for research.
		E. Analyze soil to determine types or quantities of fertilizer or other inputs required for maximum crop or forage production.
		F. Collect soil samples and understand lab analysis reports.
General Competencies	100 OJT Hours 12 RI Hours	G. Implement soil improvement and weed control practices such as cover crops, composting, crop/animal rotations, soil additives, and inoculants, prescribed burning, and tarping.
		H. Participate in or conduct pest scouting with crops or stock examinations with livestock to identify diseases or parasites.
		I. Replace chemical insecticides with environmentally friendly practices, such as integrated pest management practices.
1. Soil health and weed control	100 OJT Hours 12 RI Hours	J. Inspect facilities and equipment for signs of disrepair and perform necessary maintenance work.
		K. Adjust, repair, and service farm machinery and notify supervisors when machinery malfunctions.
		L. Aid in the construction and maintenance of farm or ranch structures, such as buildings, fences, drainage systems, wells, or roads.
2. Pest and/or parasite control	100 OJT Hours 12 RI Hours	M. Operate or tend equipment used in agricultural production, such as tractors, combines, planting, and irrigation equipment.
		N. Drive trucks to haul crops, supplies, tools, or farmworkers.
		O. Assist with analyzing market conditions to determine acreage allocations and estimate production needs.
3. Equipment and machinery operation and farm maintenance	500 OJT Hours 8 RI Hours	P. Participate in clerical, record-keeping, inventory, requisitioning, and marketing activities.
		Q. Determine how to allocate resources and to respond to unanticipated problems, such as insect infestation, drought, and fire.
		T. Negotiate with buyers for the sale, storage, or shipment of crops or livestock.
4. Business Management & Marketing	350 OJT Hours 40 RI Hours	U. Evaluate marketing or sales alternatives for products.
		R. Maintain financial, operational, production, or employment records for farms or ranches.
		S. Direct and/or monitor the activities of work crews, employees, or volunteers engaged in farming activities.
5. Personnel management and leadership	50 OJT Hours 12 RI Hours	W. Inspect facilities and equipment for signs of disrepair and perform necessary maintenance work.
		X. Understand and comply with policies relating to operations administration and standards, facility maintenance, and safety.
		Y. Representing the farm business at public events on the farm or off the farm including markets and fairs, networking events, trade shows, stakeholder meetings, and agritourism activities.
6. Health and Safety on the farm	50 OJT Hours 8 RI Hours	Z. Planning, participating in, applying for, and evaluating new income streams, grant opportunities, and other resources related to agritourism, social justice, environmental, conservation, and/or natural resource enhancement on the farm.
7. Exploring farmer resources, food systems, and social issues	50 OJT Hours 16 RI Hours	

2,000 Hours OJT + 144 Hours RI
Apprenticeship Can be completed in 12-18 months
Competency Rating Scale for each skill
1= Novice 2= Advanced beginner 3= Competent 4= Proficient
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Results to Date

With the pilot cohort of apprentices finishing the apprenticeship in mid to late 2023 and another cohort of apprentices beginning early in 2023, it is too early to determine long-term results of the program. However, anecdotal evidence points to positive results to date. Further research will explore barriers veterans face to participation in long-term training programs, how farmers and apprentices determine competency in skills acquisition, and what benefits can be gained from an apprenticeship program versus informal modes of on-the-job training.

Future Plans

Apprentices and host farm employers will be evaluating the program to provide feedback via focus group interviews. To determine long-term results and implications of the apprenticeship program, apprentices will also be surveyed at 2 and 5 years post-completion.

One other strategic development of the apprenticeship would be to create a pre-apprenticeship program that would be Department of Defense Skillbridge approved. This would allow active duty service members to gain the required experience to begin the apprenticeship while continuing to receive their military pay and benefits during their last 180 days of service.

Advice to Others

There are three main points of advice to others considering the benefits of registered apprenticeships:

- 01 It is important to recruit host farms that understand the required mentoring commitments and have spent time reviewing the job book and skills list before an apprentice starts. Well prepared host farms provide enthusiastic mentorship for their apprentices making the experience more positive for all parties
- 02 Equally important is recruiting apprentices who have had some previous experience in agriculture and are ready to make the commitment to a long-term training program.
- 03 Administratively it is important to establish clear program guidelines and procedures including the application, enrollment, and onboarding processes to reduce the paperwork and time burden on apprentices and host farm employers.

*"They've served their country. Now they want to serve in a different way, They are caring for the soil, they are caring for the land, and they are growing good food for people. They are still in service."
-Farm Host*



Future Needs

Federal and State funding for registered apprenticeships in "high-demand" occupations may offset employers' wages and educational costs. Although agriculture is considered one of North Carolina's top industries, agricultural jobs will require "high-demand" classification to realize this funding opportunity.