

DACUM Research Chart for Beekeeper

Produced for



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES



West Virginia University

EXTENSION SERVICE
AGRICULTURE AND NATURAL RESOURCES
SMALL FARM CENTER

DACUM Panel

Bob Filbrun, Station Manager
Ohio State University-Muck Crops ARS
Ashland, OH

Edward Forney, Senior Apiary Trainer
WVDA Veterans & Warriors Program &
Owner, Geezer Ridge Farm
Hedgesville, WV

Terry Lieberman-Smith, Beekeeper & Vice President
Ohio State Beekeepers Association
Dayton, OH

Dave Noble, Apiarist
Stratford Ecological Center
Delaware, OH

James Tew, Faculty Emeritus-Entomology
Ohio State University
Wooster, OH

Charles Walter, Vice President-Operations & Strategic
Planning
Walter's Wholesome Goods LLC
Shepherdstown, WV

Jamie L. Walters, Beekeeper
Kaydee's Bees & Honey
Defiance, OH

Dwight Wilson, Beekeeper
Dwight & Jerry's Honey Bee Farm
Findlay, OH

Produced by



THE OHIO STATE UNIVERSITY

COLLEGE OF EDUCATION
AND HUMAN ECOLOGY

DACUM International Training Center

Columbus, OH

DACUM Facilitators

Geri LeBeau
Nikki Norwine
Martha Peck
John Moser, Team Leader

January 12-13, 2017

DACUM Research Chart for Beekeeper

January 12-13, 2017

DUTIES

TASKS

A. Manage Bee Colonies	A.1 Manipulate hive frames for honeybee population increase	A.2 Evaluate queen presence and condition	A.3 Evaluate hives for pests and diseases	A.4 Manage honeybee swarm behavior	A.5 Treat colonies for pests and diseases	A.6 Feed honeybee colonies	A.7 Update honeybee colony records	A.8 Requeen honeybee colonies	A.9 Split honeybee colonies
	A.10 Prepare honeybee colonies for cold weather								
B. Manage Apiary Operations	B.1 Obtain apiary locations	B.2 Install bear fencing	B.3 Relocate honeybee colonies	B.4 Perform deadout collection and processing	B.5 Install honeybee nucleus into hives	B.6 Install honeybee packages into hives	B.7 Raise honeybee queens	B.8 Maintain apiary buildings and grounds	B.9 Add supers for honey production
	B.10 Harvest honey	B.11 Render bees wax	B.12 Harvest propolis	B.13 Harvest pollen	B.14 Process honey	B.15 Process propolis	B.16 Process pollen	B.17 Plant honeybee forage crops	B.18 Collect honeybee swarms
	B.19 Assemble hive woodenware	B.20 Order honeybees and queens							
C. Manage Business Operations	C.1 Develop business plan	C.2 Develop marketing plan	C.3 Determine staffing needs	C.4 Evaluate financial statements	C.5 Analyze apiary records	C.6 Maintain mechanical & office equipment (e.g., fleet, honeyhouse, computer)	C.7 Manage inventory (e.g., hive, equipment, packaging)	C.8 Acquire pollination contracts	C.9 Obtain operating capital
D. Develop Marketing Programs	D.1 Create brand identification	D.2 Create company website	D.3 Develop social media presence	D.4 Create printed collateral (e.g., business cards, flyers)	D.5 Prepare traditional media campaign (e.g., newspaper, trade journals, radio)	D.6 Develop promotional items (e.g., pens, lip balm)	D.7 Provide educational programs	D.8 Develop additional product lines	
E. Manage Sales & Distribution of Hive Products	E.1 Establish product outlets (e.g., farmers markets, cold calls, grocery stores)	E.2 Ship honeybees and queens to customers	E.3 Package hive products	E.4 Prepare value-added products (e.g., infused honey, soap, honey sticks)	E.5 Ship hive products	E.6 Manage finished product inventory	E.7 Fulfill pollination contracts		
F. Perform Administrative Tasks	F.1 Retain professional services (e.g., legal, CPA)	F.2 Process employee payroll	F.3 Process incoming orders (e.g., pick tickets, invoices)	F.4 Process purchase orders	F.5 Maintain business records (e.g., taxes, sales, purchase orders)	F.6 Analyze business records	F.7 Maintain compliance with business & apiary licenses, permits and insurance	F.8 Correspond with stakeholders (e.g., customers, community)	F.9 Procure capital equipment (e.g., trucks, skid steer loaders)

DACUM Research Chart for Beekeeper

January 12-13, 2017

DUTIES

TASKS

DUTIES	TASKS							
G. Manage Staffing Process	G.1 Create staff incentives	G.2 Recruit new employees	G.3 Hire new employees	G.4 Conduct staff training programs	G.5 Provide tools & equipment to staff	G.6 Assign staff tasks	G.7 Conduct staff performance evaluations	
	H.1 Participate in bee-related conferences	H.2 Participate in bee-related formal training	H.3 Review professional beekeeping publications	H.4 Participate in local bee organizations	H.5 Maintain professional certifications	H.6 Participate in beekeeping mentoring activities		
	H. Participate in Professional Development Activities							
	About the Process							
	About the Job							

About the Process

This analysis of the job of **beekeeper** was conducted using a process called DACUM. DACUM is an acronym that stands for **Developing a Curriculum** because it is the *foundation* of the training curriculum development process (not the actual curriculum).

The process uses industry experts in the job as panelists. The panel works under the guidance of a team of trained facilitators for two days to develop the DACUM Research Chart. The chart contains a list of general areas of competence called **DUTIES** and multiple **TASKS** for each duty. Brainstorming techniques are used to obtain the collective expertise and consensus of the panel. As the panel determines each task, it is written on a card which is then attached to the wall in front of the panel. The completed chart is a graphic profile of the duties and tasks performed by the panel members.

The panel also identifies the general knowledge and skills required to perform the tasks they identified, the tools, equipment, supplies and materials used, the important worker behaviors essential for success, and the future trends and concerns regarding the job.

The process is used internationally to ensure that training programs being developed align precisely with what employees actually do on the job. This DACUM workshop was conducted by a team of trained facilitators with support from an experienced OSU facilitator.

About the Job

A **beekeeper (or apiarist)** plans, directs, or coordinates the management or operation of an apiary. May hire, train, or supervise apiary workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise the management of bee colonies and apiary operations to include raising honeybee colonies, harvesting and processing honey, propolis, beeswax, and pollen, and providing pollination services to customers.

Beekeepers can range from the small hobbyist with one or two hives to large commercial establishments that provide honeybees, related products, and educational services to other beekeepers. Beekeepers participate in professional beekeeping organizations and are often licensed and certified in their trade. It is estimated that there are over 225,000 beekeepers in the United States who manage over 2,500,000 hives.

General Knowledge and Skills

Knowledge

Basic bee biology/behavior
Local flora
Standard operating procedures
Weather forecasting/patterns
Bee botany
Marketing principles
Bee pests & diseases
Microsoft Office software
Apiary management principles and methods
Honey processing procedures
Bee handling techniques
Bee crop harvesting methods
PPE
Licensing requirements
State/federal laws/regulations
Social media
Shipping/logistics procedures
Basic accounting
Basic financial
Professional development opportunities
Recordkeeping

Skills

Basic carpentry
Basic electrical
Basic plumbing
Problem solving
Interpersonal
Multitasking
Communication
Mechanical
Analytical
Customer service
Queen rearing
Basic computer
Presentation
Leadership
Supervisory/management
Olfactory

Acronyms

MSDS	Material Safety Data Sheet
PPE	Personal Protective Equipment
CPA	Certified Public Accountant

Behaviors

Honest
Team player
Patient
Flexible
Detail oriented
Observant
Confident
Independent
Disciplined
Ethical
Tenacious
Knowledgeable
Cautious
Safety oriented
Driven
Supportive
Coachable
Pragmatic

Tools, Equipment, Supplies and Materials

Hand truck
Duct tape
Scales
MSDS
Pallet jack
Basic hand tools
Refractometer
First aid kit
Ladders
Basic office supplies
Vehicles
Glue
Trailers
Mowers
Computer/peripherals
Chain saw
Water hose
Pressure washer
Table saw
Smoker/smoker fuel
Hive tool
PPE (bee suit)
Woodenware
Queen rearing equipment
Bee medications
Bee feed
Weed wacker
Post driver
Containers (bottles, jars, labels)
Uncapper
Uncapping tank
Wax spinner
Food-grade buckets
Food-grade plastic tubing
Bottling tanks
Honey warmer
Settling tanker
Drip trays
55 gallon drums
Extractor
Queen cages
Comb cutters
Honey filters

Future Trends and Concerns

Staff retention
Processing automation
New bee pests
Disappearing forages for honeybees
Electrification of bee hives
Plastic/equipment evolution
Electronic recordkeeping
Growing honey imports
Changing beekeeper demographics
Honey demand exceeding supply
Increased use of pesticides in environment
Increasing environmental stressors (lack of clean water, public's use of chemicals)
Loss of natural bee habitats
Pollen provenance
Shorter queen longevity
Development of crops that don't need pollination
Decrease in bee genetic diversity
Access to true native plants