

Organic Livestock Systems: Views of Veterinarians and Organic Producers

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Organic Agriculture

In the 20th century, organic food and organic farming systems grew as an alternative to mainstream agricultural systems reliant on synthetic fertilizers and pesticides. During the 1980s, the demand for organic products continued to grow, but inadequate regulation of organic standards threatened to undermine the legitimacy of the organic label. Responding to concerns voiced by organic farming, consumer, animal welfare, and environmental organizations, Congress passed the Organic Food Production Act (OFPA) as a part of the 1990 Farm Bill. The National Organic Standards Board (NOSB) was appointed by the USDA in 1992, which led to the establishment of the National Organic Program (NOP). The first proposed NOP Rule was published by the USDA in 1997 (Baker 2005). Currently, the USDA uses organic as a labeling term to indicate that

...the food or other agricultural product has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used (USDA NOP 2013).

Specific requirements for production are maintained and amended by the NOP, which also accredits and oversees organizations that inspect farms for organic certification. The NOP regulates labeling of organic consumer goods to ensure the integrity of organic production.

Producers who make less than \$5,000 per year from organic product sales on their farms can qualify for “exempt” organic status, avoiding the certification process. Iowa was in the top ten states for number of farms producing USDA-certified organic or “exempt” dairy cows, beef cows, all other cattle and calves, hogs and pigs, goats and kids, layer chickens, and broiler chickens in 2008 (USDA National Agricultural Statistics Service 2010).

Benefits of Organic

Organic farming systems in general meet growing consumer demand and offer beginning and limited-resource farmers an opportunity to succeed, as they often require less start-up capital and smaller, less expensive machinery than is needed on conventional farms. Research has shown organic systems can have a per-acre economic advantage over non-organic systems, allowing larger profit potential on a smaller number of acres (Chase, Delate, and Johanns 2009). In a paper exploring the effects of size and concentration of agricultural systems on rural community health, Donham et al. (2007:317) reference studies that “consistently show that the social and economic well-being of local rural communities benefit from increasing the number of farmers, not simply increasing the volume of commodity produced.”

The benefits of livestock within agroecosystems, organic and conventional alike, are significant (Russelle et al. 2007). Integrated crop and livestock systems confer both economic returns and environmental benefits such as improved soil tilth and fertility.

Veterinary Care Challenges

Herd health care can be a significant challenge for organic production. Riddle (2004) found that four of the top five research needs in Minnesota organic livestock systems were related to health care. Although some research in Iowa (Exner 2007) and the Midwest (Yaeger et al. 2009) has addressed the veterinary needs of niche swine producers, little research has focused on the veterinary needs of organic farmers.

Few practicing veterinarians understand the National Organic Program (NOP) Regulations and are trained in alternative modalities (National Center for Appropriate Technology Organic Livestock Workbook 2004). Currently, much veterinary understanding of organic systems and treatment options comes word-of-mouth and vet-to-vet (Jodarski 2009), or through specialized books and websites.

Organic treatment options are not part of the curriculum in most colleges of veterinary medicine. Some herd health care knowledge is available from university extension (Dettloff 2009a) and some continuing education for organic veterinary care is available. For example, Wisconsin's Department of Agriculture, Trade and Consumer Protection has offered training

courses for organic dairy personnel (Rideout 2009). Continuing education providers and programs are approved by the Registry of Approved Continuing Education (RACE), a program of the American Association of Veterinary State Boards (AAVSB). In addition, some veterinary conferences address antibiotic-free treatments and organic herd health needs.

In a 2009 study, Rideout found that 60% of veterinarians completing Wisconsin's Department of Agriculture, Trade and Consumer Protection (DATCP) training for organic dairy personnel were interested in receiving additional training on specific holistic treatments, and 42% were interested in learning more about how systems-based management can be used on organic dairy farms (Rideout 2009).

Two Surveys

In 2010, co-authors Jennifer O'Neill and Betty Wells conducted two mailed surveys as part of a project, *Improving Veterinary Care for Organic Livestock Systems*. This research, funded by the Leopold Center for Sustainable Agriculture, supported O'Neill's (2010) M.S. thesis research, directed by Wells. Our goal was to learn about how organic producers utilized veterinary care in their production systems, and the experience of veterinarians with, and attitudes toward, organic systems. Another objective was to address the adequacy of the current educational framework, from the perspectives of both veterinarians and organic livestock producers.

We first present the results of our survey of veterinarians and then the results of our survey of organic livestock producers. The methodology for both surveys was approved by the Institutional Review Board at ISU.



Organic sheep are the primary enterprise at Mint Creek Farm in Stelle, Illinois, toured by the Midsummer Veterinary Conference for Sustainable Agriculture in 2010. A movable watering system aids rotational grazing. Photo by Jennifer O'Neill.

Veterinarian Survey

Research Methods

During summer 2010, we surveyed 487 practicing food animal veterinarians listed with the Iowa Veterinary Medical Association. We asked about attitudes toward organic systems, organic education in colleges of veterinary medicine, continuing education, and participation in veterinary associations and networks focused on organic and sustainable agriculture. Response rate was 69%, based on 337 returned surveys. Analysis is based on 296 surveys completed by veterinarians who worked with food animal producers; 41 veterinarians who did not currently work with food animals were excluded.

Findings

The average age of the veterinarians was 50 years. Their length of practice was 25 years. Sixty-five percent most commonly provide care for beef cattle. Just under half (47%) were working with at least one organic system. Organic producers comprised a very small proportion of their clients.

Only 8% of veterinarians saw a growth in demand for services to organic farms, with the majority (54%) saying demand had been consistent in recent years. Eighty-five percent said they made no attempt to market themselves specifically to organic producers.

Attitudes, Involvement

Over half (56%) of veterinarians indicated some level of interest in organic agriculture (Figure 1). Those who work with organic producers expressed significantly more interest than those who do not (70% v. 44%), whereas those who do not work with organic producers were much more likely to be undecided (31% v. 11%).

The majority indicated that *most veterinarians have some reservations about organic livestock production* (Figure 2). The others saw more indifference (35%) than strong support (2%) or

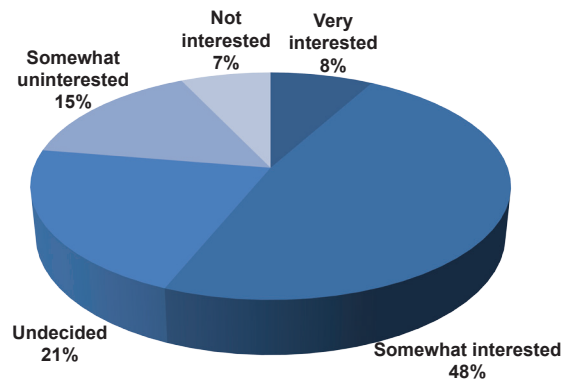


Figure 1. Interest in organic livestock production reported by veterinarians (n=295)

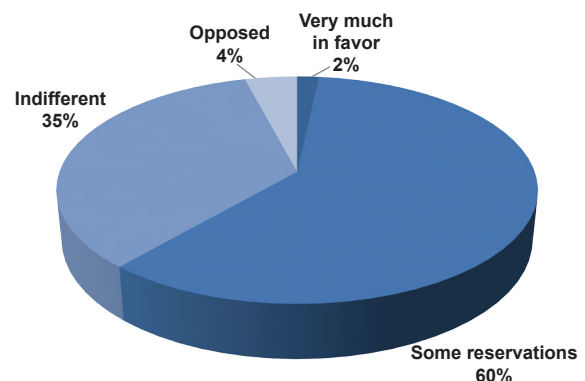


Figure 2. How most veterinarians view organic livestock production (n=293)

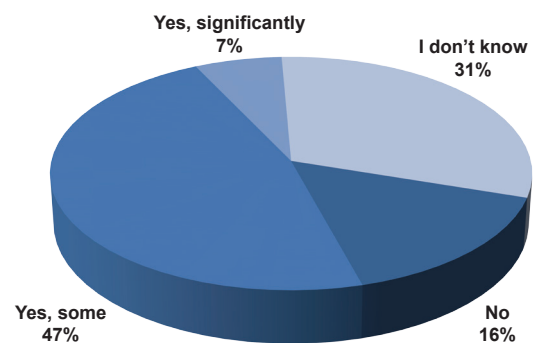


Figure 3. Would improved veterinary understanding of organic systems increase farm profitability? (n=293)

strong opposition (4%). Whether or not they worked with organic producers did not factor into their answers.

Over half (54%) of the veterinarians, both those who work with organic producers and those who do not, believed the profitability of organic farms would increase with improved veterinary understanding of organic systems (Figure 3).

Table 1. Levels of Agreement with Statements about Organic Production Systems

	Agree	Not Sure	Disagree	N
	Percent			
Organic agriculture meets a consumer demand.....	86	9	5	292
Organic agriculture is typically better for the environment.....	44	20	36	295
Organic agriculture is economically a good idea for farmers....	19	40	42	294
Organic agriculture means fewer profits for veterinarians.....	42	38	20	289
Organic agriculture is not a viable production system	28	28	44	293
Organic farmers avoid use of modern technology.....	34	14	52	293

Statements reported in different order than they appeared in the questionnaire.

The veterinarians overwhelmingly agreed that *organic products meet a consumer demand* (86%), but only 19% agreed that *organic agriculture is economically a good idea for farmers* (Table 1). While 42% agreed that *organic agriculture means fewer profits for veterinarians*, almost as many (38%) were “not sure.” More agreed than disagreed that *organic agriculture is not a viable production system*, and *organic farmers avoid modern technology* was met by more disagreement than agreement. The high percentages of “not sure” responses seem to reflect considerable uncertainty among these veterinarians.

Over half (55%) said they would prefer to receive a call from a non-organic farmer than

an organic farmer. There was a statistically significant difference in responses on this question between the veterinarians who work with organic producers and those who do not, with the former more favorably disposed. About equal numbers were uncertain (22%) or disagreed (23%) with this statement.

About half (51%) of the vets reported they have little knowledge of health treatment options for organic livestock; 56% indicated their colleagues had little knowledge. Fewer, 38%, reported that they and their colleagues know *a few organic treatment options for some health challenges occurring in the species treated most frequently*.

Veterinarians who worked with organic producers reported fewer routine and emergency

visits at the organic farms they serve compared with the non-organic (Figure 4). Note that our data do not allow an animal-to-animal comparison between organic and non-organic farms. As two veterinarians commented in the survey margins, organic farms may require fewer calls because they have fewer animals, and not necessarily because on-farm health is better in those systems. Three veterinarians noted that organic producers make fewer calls to veterinarians not necessarily because there are fewer ailments, but because organic producers are less likely to ask for veterinary advice. Ten vets



Phil Bane D.V.M. and Matt Kilgus (both at right) discuss pasture management at Kilgus Dairy near Fairbury, Illinois (2010). Listeners include veterinarians, vet students, and livestock producers.

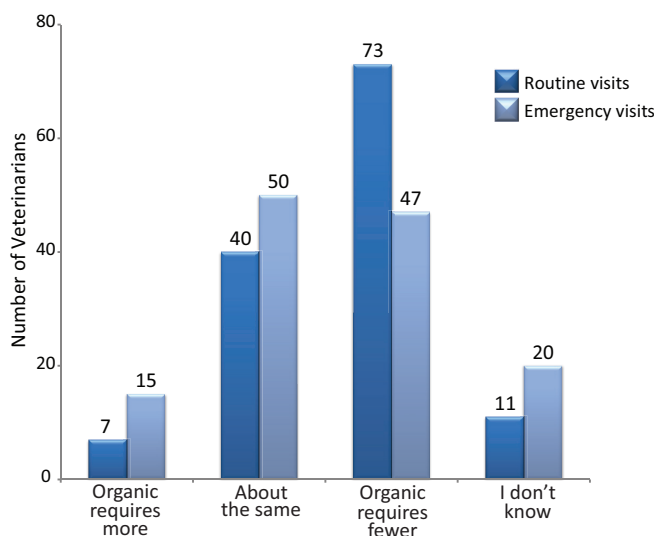


Figure 4. Vet calls from organic producers compared with non-organic producers (n=134)

indicated that organic producers were overly reluctant to seek help from veterinary professionals.

Asked about herd health in organic and nonorganic systems in terms of amount of sickness, longevity, and productivity, few veterinarians gave the edge to organic systems, although those who work with organic producers were more favorable (Table 2). The clear sentiment, even among those working with organic systems, was that organic systems do worse, especially in terms of productivity. High percentages of “don’t know” may reflect limited experience with organic systems or an inadequate research base.

Comments

Specific ideas for improving organic agriculture were offered by 45 veterinarians. The most frequent comments, listed by theme, with at least one representative comment, are:

Accessibility of Training and Information (12 comments)

Several veterinarians noted that information is scarce and suggested seminars and conferences as training options.

I do not have enough knowledge about organic agriculture to offer any ideas about how it can

Table 2. Veterinarian Herd Health Perspectives by Experience Working on Organic Farms

	Work with Organic Producers? (%)		Total
	No	Yes	
Amount of Sickness			
Organic does better	3	7	5
About the same	17	32	24
Organic does worse....	50	44	47
Don't know.....	30	17	24
Total	100	100	100
n	153	132	285
Longevity			
Organic does better	7	11	9
About the same	16	29	22
Organic does worse....	39	35	37
Don't know.....	38	25	32
Total	100	100	100
n	152	134	286
Productivity			
Organic does better	1	2	1
About the same	9	8	9
Organic does worse....	60	77	68
Don't know.....	30	14	22
Total	100	100	100
n	152	132	284

be improved. Perhaps educating veterinarians would be a good start.

Veterinarians in general need more reliable, science-based info about organic production. I and probably all of my colleagues would attend CE under any conditions to get more good info.

Need for Improved Farm Management (10 comments)

Better management practices – clean, dry, good ventilation. Avoid overcrowding of facilities.

These farms could benefit from good preventive management practices. Good hygiene, cow comfort, etc.

Need for Changes in Regulations (8 comments)

Some veterinarians expressed concern that overly stringent organic guidelines create a disincentive to treat sick animals, leading to decreased animal welfare since those treated with prohibited substances lose their organic status.

My biggest concern is with internal and external parasites. I'm not sure if they can be effectively controlled under organic guidelines.

Need for Absolute “Guidelines” (6 comments)

Some veterinarians are unclear as to how organic is defined.

There MUST be specific standards.

Although certified organic production is legally defined and federally regulated, there is concern that specific regulations do not exist or are inconsistently applied.

The Information Gap

The majority of veterinarians in this study graduated before the USDA organic rules went into effect in 2002; only 1% had the option to receive instruction in treatments for organic livestock during their veterinary education.

More than a third (39%) felt that veterinary medicine programs should provide more coverage of the topic, but even more (47%) were undecided, and 14% did not favor more coverage. Few veterinarians (5%) are members of organizations providing education related to organic livestock production, and even fewer (4%) have ever attended workshops or field days. Only 19% are even aware that such events occur. Most veterinarians said information related to organic livestock is unavailable (31%) or difficult to access (61%); only 8% indicated adequate information is available.

Veterinarians relied most frequently on the Internet and other veterinarians as sources of information on organic livestock. Average responses on a scale from 4 (frequently) to 1 (never):

- Internet, 2.2
- other veterinarians, 2.2
- books, 2.0
- the University and other academic/research institutions, 1.9
- veterinary journals and magazines, 1.9
- veterinary associations, organic inspection, certification, and education agencies, 1.7
- veterinary workshops and continuing education, 1.6

The majority of veterinarians (72%) said they would attend an educational event related to organic agriculture. Of the 274 who would, factors favoring attendance were:

- right timing, location, and price (152)
- quality information (127)
- continuing education credits (119)

Those who would not attend such events gave three reasons:

- belief they could get the information elsewhere (15)
- skepticism about the quality of information they would receive (5)
- lack of interest (65)

Several added in the survey margins that they simply do not have the demand for organic knowledge and services within their practice. One wrote, *Would be interested in information if demand existed.*

Most veterinarians (80%) saw a role for their profession in the development of organic agriculture. Most who commented mentioned traditional on-farm services such as preventive management, health advice, vaccination protocols, and biosecurity. A few mentioned policy development, inspection and monitoring, and testing of alternative treatment products.

Organic Producer Survey Research Methods

The goal of the second survey was to assess challenges faced by Iowa organic livestock producers in accessing veterinary care, and to learn more about how they typically handle herd health needs, the tools and products used in production systems, and their information sources. The survey population was identified from a list of USDA Certified Organic livestock producers and the online producer lists from agencies that certify in Iowa. Surveys were mailed in April 2010 with a May follow-up.

The response rate was 56%. Analysis is based on 75 valid surveys, primarily from dairy producers. Respondents are disproportionately found in the southeast and northeast counties of Iowa, with a third residing near Kalona, in Washington County, in southeastern Iowa. This skewed geographic distribution needs to be kept in mind when interpreting findings.

Findings

Producer ages averaged 51. Most (95%) were male. The average length of time spent farming was 22 years. They reported their farms had operated according to organic principles for up to 50 years, averaging 12.5 years.

Dairy cows were the primary source of livestock income for 52%, followed by poultry (19%) and beef (15%). (Recall that 65% of the veterinarians most commonly provided care for beef cattle, a difference between our two sets of survey respondents to keep in mind.)

We collected organic livestock product sales figures for each farm in 2009, but we did not ask about organic crop sales. Based on livestock sales figures, 80% of the farms in our sample fit the USDA Economic Research Service definition of a small farm, a farm with sales less than \$250,000 (USDA ERS 2005).



Guy Jodarski D.V.M. discusses organic agriculture and animal health at a variety of conferences and events, including an annual veterinary workshop hosted by Organic Valley. (Photo courtesy of David Bane D.V.M.)

Nearly all producers (96%) work full-time on their farms. Nearly half (48%) are the sole provider of hands-on care for their livestock; the rest shared care with one to eight additional people.

Prospects and Challenges

Fifty-six percent of producers reported increased demand for their organic product, all of whom related it to increased consumer awareness about food origins and production processes. Of the 17% who reported decreased demand, all cited the weak economy as the main cause.

Producers rated proximity to a processing facility as the greatest of seven challenges to organic livestock production, followed by difficulties in marketing and herd health. Most viewed veterinary care as “not a challenge” or “a small challenge.” Average scores in order from most (4) to least (1) challenging:

- proximity to processing facility (2.2)
- marketing (2.1)
- herd health (2.0)
- meeting housing/space requirements (1.7)
- obtaining veterinary care (1.6)
- obtaining organic feed (1.6)
- transportation of livestock (1.3)



Jersey calf at Kilgus Dairy, where milk is produced on grass, all-natural, without added rBST.

The most common herd health challenge, reported by 38 dairy producers, was mastitis/high somatic cell count. Other dairy problems included:

- foot problems (foot rot, hairy heel wart, and sore feet), reported by six producers
- parasites (reported by 5)
- pinkeye, calving difficulties, pneumonia, milk fever, and scours (reported by 3 each)
- bloat, displaced abomasums, and Johne’s (reported by 1 each)

Beef herd challenges included:

- parasites (5)
- milk fever, calving, and pinkeye (3 each)
- scours (2)
- acidosis, pneumonia, bloat, hoof problems, and mastitis (1 mentioned each)



Ron Rosmann fields questions from ISU students about the organic livestock production system on his Shelby County farm in southwestern Iowa.

Parasites were reported in two swine herds and pneumonia by one goat producer. Two poultry producers mentioned problems with cannibalism. Fly control and disease were also mentioned.

Views on Veterinary Care

Most producers were generally satisfied with the quality of available veterinary care (Figure 5). Only 10% expressed any dissatisfaction. When asked how challenging it is to obtain quality veterinary care, 57% indicated “not very difficult.”

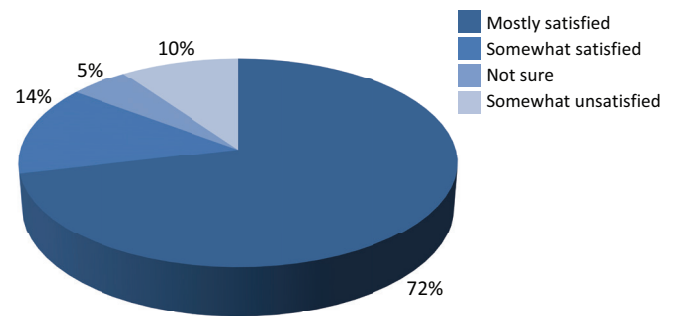


Figure 5. Producer satisfaction with veterinary care for organic livestock (n=74)

Most producers handle routine needs on their own but rely on a local veterinarian for emergency needs (Figure 6). Those who deal with the majority of veterinary needs themselves

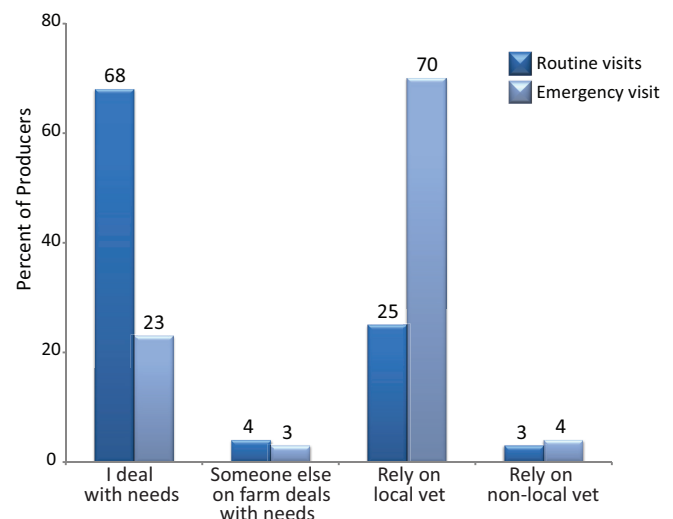


Figure 6. How organic livestock producers handle routine and emergency veterinary care (n=73)

do so because they do not experience a significant number of health challenges, or are capable of handling most difficulties on their own (Table 3). Only a few producers gave availability of a local vet primarily as a reason.

Producers generally perceive veterinarians willing and able to meet their needs (Table 4).

Information Sources

Producers rated six information sources relied upon most frequently in dealing with common health problems. *Past experience and personal knowledge* was relied on “often” by 81%; *word-of-mouth* by 35%. *Books, organic veterinary workshops and field days, and veterinarians* were relied on at nearly the same frequency. Somewhat surprisingly, *the Internet* was

relied on the least, a result we attribute to the disproportionate representation of Amish and Mennonite producers in our sample.

Forty percent of producers reported membership farming and marketing organizations that provide education related to organic livestock:

- Organic Valley/Organic Prairie/CROPP Cooperative (mentioned by 18)
- Practical Farmers of Iowa (PFI) (8)
- Midwestern Organic and Sustainable Agriculture Education Service (MOSES) (3)
- Global Organic Alliance, Midwestern Bio-Ag, National Farmers Organization, Farmers Henhouse, and Oregon Tilth (1 each)

Table 3. Why Producers Handle Veterinary Care on Their Own

	Percent	N
My farm does not experience enough herd health challenges to consult a veterinarian routinely.	67	41
My farm has the capacity to handle most health challenges on its own.....	54	33
My farm does not experience enough herd health emergencies to consult a veterinarian for emergency care.....	31	19
I haven't found a local vet who understands the requirements specific to organic production.....	11	7
I haven't found a local vet who is willing to operate in organic systems.....	5	3

Percentages are based on 61 producers who handle the majority of the veterinary needs on their own, and excludes 14 who don't. They were allowed to select more than one reason.

Table 4. Levels of Agreement with Statements about Local Vets

	Agree	Not Sure	Disagree	N
	Percent			
Local vets are generally supportive of organic production.	64	13	23	69
Local vets know how to deal with injured animals under organic guidelines.	65	4	30	69
Local vets know how to deal with sick animals under organic guidelines.	61	6	33	69
Local vets have an adequate knowledge base to deal with organic livestock.....	54	8	39	67
Local vets have the products necessary to deal with the health problems common on my farm.....	48	12	40	67

About a third (32%) of producers were connected with organizations providing publications related to organic livestock production:

- Organic Valley/Organic Prairie/CROPP Cooperative (14)
- Crystal Creek (3)
- MOSES (2)
- ACRES USA, Midwest Organic Services Association (MOSA), PFI, Appropriate Technology Transfer for Rural Areas (ATTRA), Organic Farming Research Foundation (OFRF), eOrganic (eXtension), and the Stockman Grass Farmer (1 each)

Sixty-one percent of producers had attended workshops dealing with organic herd health care; 51% cited workshops put on by Organic Valley. Many specifically mentioned events that featured Paul Dettloff, a Wisconsin veterinarian involved with organizing annual veterinary conferences for Organic Valley. Also mentioned were workshops or field days held by:

- Midwestern Bio-Ag
- PFI
- Crystal Creek
- University of Nebraska's Alternative Herd Health Workshop
- feed companies
- Upper Midwest Organic Farming Conference
- Pennsylvania Sustainable Ag Association
- MOSES
- ISU's Annual Organic Conference
- Farmers Henhouse

Nearly all (95%) of these who had attended at least one of these meetings expressed satisfaction about the quality of the information provided. The remainder were undecided.

The survey concluded by inviting further comments, which we organized by themes:

- the closest or “only available” vets for organic livestock not being local (4);
- the need for peer-reviewed research and scientifically-backed veterinary treatments for organic livestock (2);
- parasite problems (2);
- the organic market being flooded by “bogus” organic products, due to lax oversight and regulation (2);
- good support from ISU Extension, specifically the swine program specialist (1).

Conclusions from Surveys

While keeping in mind that the questions asked and the survey populations were distinct, we drew some general conclusions.

1. Veterinarians, in contrast to the producers, perceive a variety of health issues on organic farms and stress the benefits that would come with veterinary involvement in these systems and scientific evaluation of methods and products.
2. The organic producers, by and large, are satisfied with the availability of veterinary services. They prefer to handle most routine health care on their own, giving a lack of herd health challenges as the primary reason.
3. Veterinarians are unsure about how best to serve organic producers and where to



Organic poultry add further diversity to Mint Creek farm, owned by Harry and Gwen Carr.

acquire reliable information. Comments revealed some questions regarding the definition and rules of organic production and existence of national standards.

These results echo Rideout's (2009) finding of *gaps in perception, knowledge, and communication* among players in organic livestock systems.

Contrary to the beliefs of some, a toolbox for organic herd care does exist. It has evolved to some degree outside the scientific community. Some practitioners utilize natural treatments such as medicinal plants and mineral remedies for livestock, as well as NOSB-approved synthetic treatments (Karreman 2007). Other veterinarians make use of homeopathy (Shaeffer 2003) and acupuncture/acupressure (Lindley 2006).

Dettloff (2009b) addresses successful natural treatments for each of the main body systems in cattle, sheep, and goats and ten essential pieces of the "Organic Tool Kit": tinctures, homeopathy, essential oils, aloe products, whey products, botanicals, vitamins and antioxidants, trace and macro elements, and probiotics. In addition to these treatments, structural and management changes can reduce stress and limit transmission of disease and parasites. Joe Pedretti (2011) provides additional information in a recent newsletter article.

The USDA National Organic Program (NOP) website [<http://www.ams.usda.gov/AMSV1.0/nop>] provides detailed information regarding organic agriculture (USDA NOP 2012). Under the Organic Standards heading is a link to Organic Regulations (Title 7, Part 205) for the production of livestock and other products. The Livestock health care practice standard at §205.238, is of interest to those providing health treatment for organic livestock. Also, §205.603 lists synthetic substances allowed in organic livestock production, and §205.604 shows nonsynthetic substances prohibited for use in organic livestock production.

Veterinary associations, such as the American Association of Bovine Practitioners and the Veterinary Information Network, already sources of information about organic production for some survey respondents, might do more to compile and relay information to their members. This might include information from certifying agencies or fact sheets addressing basic concepts and common misperceptions about organic agriculture, links to Internet resources, and information about conferences, workshops, and continuing veterinary medical education (CE).

Most veterinarians surveyed would attend CE related to organic livestock care. However, according to Illinois veterinarian Jennifer Burton (personal communication 2010), RACE standards hinder the process of approval for CE related to organic treatment options (AAVSB 2013). Only those CE programs that reflect *that body of knowledge and skills accepted by the profession as within basic veterinary sciences* are subject to RACE approval, and these programs should *build upon or refresh the participant in the standards for practice and the foundational, evidence-based material presented in accredited colleges or schools of veterinary medicine or veterinary technician programs*. In other words, CE credit is not likely to be granted to material not covered in traditional veterinary medicine programs. In addition: *CE programs that advocate unscientific modalities of diagnosis or therapy are not eligible for RACE approval*. For CE to be legitimized by the RACE standards will require increased information on organic livestock and treatment options presented in schools of veterinary medicine, and increased scientific research and testing related to safety and effectiveness of alternative treatment products and methods.

Of course, useful information can still be shared at non-approved workshops and conferences, but such meetings should be better publicized, more broadly sponsored, and more frequent in order to meet the information needs of veterinarians.

In conclusion, our research points to a clear need for peer-reviewed research on herd health treatment products and effective, scientifically-tested livestock health care products that meet organic requirements. Until treatment options are legitimized by rigorous science, information dissemination will be met with skepticism by many veterinarians. In the meantime, the basic elements of herd health – sanitation, stress reduction, biosecurity, and nutrition – should be encouraged and practiced in order to minimize health challenges in organic livestock systems.

Our research also raises a number of questions:

- How should educators, veterinary professionals, and leaders in the organic movement interpret the discrepant producer and veterinarian views on organic livestock health?
- How are resources to be allocated for veterinarian training when most producers appear to already be satisfied?
- How can understanding and relationships best be developed between organic producers and veterinarians?
- How can existing conferences and workshops be strengthened to meet the needs of the many veterinarians who are interested in getting more information?
- What is the role of Extension and other university professionals with regard to organic herd care, and what training do they need?



Goats make up an additional organic enterprise at Mint Creek Farm. This movable shelter provides two layers of shade.

- How can the evaluation, testing and development of organic products, and treatment practices be enhanced?
- What legal issues are involved with recommending treatments outside of the traditional standard of care for an ailment?

To answer these questions will require fostering communication, cooperation, and education among organic farmers, veterinarians, university scientists, and others so that no knowledge or skill is neglected.

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