

# Allergic Pneumonitis in Cattle

by  
*Francis H. Fox, D.V.M.*  
*Professor of Veterinary Medicine and Obstetrics*  
*New York State Veterinary College*  
*Cornell University*

During the past year we have investigated herd outbreaks of an unusual respiratory syndrome in two widely separated dairy herds in New York State and one in Canada. The Canadian herd consisted of approximately 70 purebred Holstein milking animals; one of the N.Y. herds was comprised of 40 purebred Guernsey milkers and the other was a "commercial" dairy consisting of approximately 70 head, mostly Holsteins with a few Guernseys and Jerseys. In each herd, the history, signs, progression of the syndrome and subsequent sequellae have been identical.

*History:* The veterinarian was called because a number of animals (ave. 20%) demonstrated varying degrees of respiratory embarrassment in mid-July. They coughed intermittently, had dyspnea (principally inspiratory), demonstrated a moderate drop in milk production and showed an intermittent anorexia, depending upon how severe the coughing spasms were when attempting to eat dry concentrate feed. In each herd, the barn and the individual cows had been "fogged" with a pressure "fogger" containing a commercial spray individually while secured in stanchions in an effort to control face flies 5 to 8 days prior to the onset of clinical signs.

*Examination:* The animals appeared as described by the owner's history. The average temperature was in the high normal range with a few as high as 103.8° F. to 104.5° F. It is postulated that the fevers were probably due to the mechanical effort (energy) expended in trying to breathe, particularly in the more severely affected individuals and on hot and humid days. Auscultation of the thorax (during the initial and subsequent visits) revealed a uniform increased vesicular mummur in all and, depending upon the severity of the case and its duration, widespread rales, mostly dry in nature with an occasional musical tone.

*Diagnosis:* None. — Allergic pneumonitis?

*Treatment:* A variety of medications were employed on a number of individuals (supportive and experimental!) including antibiotics, antihistamines, corticosteroids, sodium and potassium iodide and atropine sulfate—all to no avail.

*Sequellae:* The signs persisted to a greater or lesser degree in each individual for as long as three months and some individuals still demonstrate a mild intermittent cough (1½ years from the onset).

A total of seven animals (from two of the herds) were necropsied because of "drying up completely" and becoming extremely emaciated.

Respiratory signs gradually appeared (over a period of three months) in an average of 80% of the animals in each herd, including heifers (down to six months of age) and dry cows which were at pasture when the "fogging" took place. As these individuals calved and joined the milking herd and as the young stock was brought into the barn for winter, each demonstrated similar respiratory involvement.

Culling, because of unthriftiness, has been necessary in the removal of several animals from the herds. In general, no new cases have appeared during this past summer, but a few of the remaining adult animals demonstrate intermittently mild respiratory embarrassment particularly in humid and hot weather.

*Necropsy findings:* A few quotations from one of the case reports is representative—"Multiple nodules and areas of pneumonia in most areas of the lungs, well scattered. These are firm pin-head up to an irregular 1 cm. in diameter. Many are slightly greenish appearing on the surface of the lung while others are various shades of reddish brown. All can be palpated as small firm nodules. The lungs themselves are inflated more than normal and feel slightly firmer. The adjacent nodes are not remarkable."

*Microscopic:* "Lung-marked smooth muscle hypertrophy and hyperplasia of small airways and vessels" . . . "Scattered stromal thickening with chronic inflammatory cells and eosinophils" . . . "several foci of pneumonia and many neutrophils in stroma and aveoli."

*Diagnosis:* Pneumonitis and bronchitis, allergic, with eosinophils and smooth muscle hyperplasia and hypertrophy" . . . "Pneumonia, focal" . . . "It is a new type of cattle lung disease to the pathologist."

*Discussion:*

1. Is there some component in the commercial spray used which subsequently caused an allergic reaction?
2. Is it possible that the affected individuals harbored a small number of lungworms (*Dictyocaulus* spp.) or migrating *Ascaris lumbricoides* larvae which were killed by the spray and which subsequently set up the allergic

type response in the lung tissue?

3. If either No. 1 or No. 2 is true, why did the condition subsequently appear in the individuals in the herd which were in no way exposed to the "fogging?" Did an "opportunistic" unidentified virus or bacteria "take over"?

If any of you have the answer and/or have experienced similar outbreaks, I'd be glad to hear from you!

*Addendum:* During the past summer, and by telephone conversation with veterinarians, four other similar herd outbreaks have been reported, all with the same "fogging" history.

It behooves us, therefore, in the best interest of our clients to remind them to follow the manufacturer's directions closely in the control of face flies. A "fogger" held near the muzzle of a restrained animal may be an invitation to similar disaster!

(*Mycotoxicoses, contd. from pg. 20*)

**REFERENCES**

1. P.M. Newberne and G.N. Wogan, *Sesquential Morphologic Changes in Aflatoxin B Carcinogenesis in the Rat*, Cancer Research, 28, 1967, pp. 770.
2. W.L. Sippel, J.E. Burnside and M.B. Atwood, *A Disease of Swine and Cattle Caused by Eating Moldy Corn*, Proc. Book, A.V.M.A., 1953, pp. 174.
3. R. Allcraft, *Aspects of Aflatoxicosis in Farm Animals in Mycotoxins in Foodstuffs*, G.N. Wogan ed. M.I.T. Press, Cambridge, Mass., 1965, pp. 153.
4. C.F. Simpson and E. West, *Ergot Poisoning in Cattle*, Univ. of Florida Ag. Experiment Station Circular S-43.
5. R.J. Garner, *Veterinary Toxicology*, Williams and Wilkins Co., Baltimore, Md., 1963, pp. 305, 321.
6. R.D. Radliff, *Veterinary Toxicology*, Lea and Febiger, Phila., Penn., 1964.
7. L.E. McDonald, *Drugs Acting Upon the Uterus in Veterinary Pharmacology and Therapeutics* L.M. Jones ed., Iowa State Univ. Press, Ames, Iowa, 1965, pp. 790.
8. S.G. Yates, H.L. Tookey, J.J. Ellis, W.H. Tallent and J.A. Wolff, *Mycotoxins as a Possible Cause of Fescue Toxicity*, J. of Ag. and Food Chem., 17, 1969, pp. 437.
9. J. Forgacs and W.T. Carll, *Mycotoxicosis*, Advance in Veterinary Science, 7, 1962, pp. 273.
10. J.R. Bamberg, F.M. Strong, and E.B. Smalley, *Toxins from Moldy Cereals*, J. of Ag. and Food Chem., 17, 1969, pp. 443.
11. G.N. Woogan, *Mycotoxin Contamination of Foodstuffs*, Advances in Chem., No. 57, 1966, pp. 195.
12. E.H. Marth, *Aflatoxins and other Mycotoxins in Agricultural Products*, J. of Milk and Food Tech. 30, 1967, pp. 192.
13. B.J. Wilson, *Toxins Other than Aflatoxin Produced by Aspergillus flavus*, Bact. Revs. 30, 1966, pp. 478.
14. A. Taylor, *The Chemistry and Biochemistry of Sporidesmins and other 2, 5 Epidithia-3, 6-dioxopiperazines in Biochemistry of Some Foodborne Microbial Toxins*, R.I. Mateles and G.N. Wogan ed., M.I.T. Press, Cambridge, Mass., 1967, pp. 69.
15. C.J. Mirocha, C.M. Christensen and G.H. Nelson, *An Estrogenic Metabolite Produced by Fusarium gaminearum in Stored Corn in Biochemistry of Some Foodborne Microbial Toxins*, R.I. Mateles and G.N. Wogan ed., M.I.T. Press, Cambridge, Mass., 1967, pp. 119.
16. I.F.H. Purchase and W. Nel, *Recent Advances in Research on Ochratoxins Part I. Toxicological Aspects in Biochemistry of Some Foodborne Microbial Toxin*, R.I. Mateles and G. N. Wogan ed., M.I.T. Press, Cambridge, Mass., 1967, pp. 153.

"If I could live my life all over again, I would become a veterinarian."

Paul Getty



**the AVMA  
FOUNDATION**

**Benefiting man and  
animal through . . .  
education and research**

Contributions are tax deductible

**the AVMA FOUNDATION**  
600 SOUTH MICHIGAN AVE. / CHICAGO, ILL. 60605