

## **VIDA 2003**

### **INTRODUCTION**

#### **Source of Data**

The Veterinary Investigation Diagnosis Analysis database - VIDA - contains a record of every submission made to Veterinary Laboratories Agency (VLA) Regional Laboratories (RLs) and Scottish Agricultural College (SAC) Disease Surveillance Centres (DSCs) in Great Britain and has been operating since 1975. In England and Wales there are fifteen such centres which form part of the Surveillance Division of the Veterinary Laboratories Agency. In Scotland there are eight centres, administered by the Scottish Agricultural College. All twenty three centres contributed information for inclusion in 2003. The total number of submissions received in 2003 was 126,704. This includes the total number of diagnoses given in the tables and submissions for which no diagnosis code was recorded. It should be noted that a submission could have more than one diagnosis. As well as the production of this booklet, VIDA is also used for ad hoc investigations, and in 2003 CERA (previously called the Epidemiology Department) of the VLA Weybridge received 71 such requests for information, involving 1315 individual data retrievals.

#### **Disease and species code changes in VIDA in 2003**

There were no new disease or species code changes made in 2003.

#### **Bias in VIDA**

Total numbers of submissions recorded by VIDA represent only the material submitted to VLA Regional Laboratories and SAC DSCs for investigation. This bias is influenced by many factors including, for example, the particular clinical presentation of a suspected disease, the level of awareness of a disease and its perceived importance, the value

of the animal or animals affected, and the general economic climate. Particular diagnoses may be affected by improved scientific methods, and knowledge of this may also affect rates of submission; these factors will usually vary differentially with time. This bias should be considered when interpreting both individual figures, and apparent trends, from VIDA data.

VIDA diagnosis totals are intended to represent only cases of clinical disease, hence the necessity for the category “DIAGNOSIS NOT APPLICABLE” (code 991) and “SCREENING – No clinical problem” (code 980). Included under this umbrella are the results of, for example, samples sent to VLA Regional Laboratories for non-diagnostic testing, plus results of tests performed by one VLA Regional Laboratory on behalf of another (usually because of specialist facilities), when the diagnosis will be recorded by the VLA Regional Laboratory to which the sample was originally submitted. When examining annual diagnosis figures for a particular disease, it is therefore advisable to relate them not just to the total diagnoses in that year and class, but also to exclude submissions where the diagnosis is 'not applicable' and those for “screening – no clinical problem” before comparing one year with another. Total submissions excluding 'not applicable' and 'screening' are referred to as 'diagnostic submissions' (see Table 1).

### **Future of VIDA**

In November 1998 a new database called FarmFile was established; this is networked between all the laboratories of the VLA serving England and Wales and collects both administrative and surveillance data pertaining to the diagnostic work carried out by the VLA regional laboratories. Data from the SAC Disease Surveillance Centres is added to this to produce the VIDA national statistics.

FarmFile has enabled more extensive case information such as reason for submission, clinical signs and husbandry to be recorded for submissions from England and Wales and trend information from this database will be included in future editions of the VIDA report.

### **FOOT AND MOUTH DISEASE OUTBREAK 2001**

On 20 February 2001, Foot and Mouth Disease (FMD) caused by the O1 Pan Asia strain of virus was confirmed in Great Britain. A Controlled Area Order was imposed across the whole of the country on 23 February 2001, which prohibited the movement of livestock except under official control and banned livestock markets. During the subsequent epidemic, 2,026 outbreaks were confirmed. The final confirmed outbreak was on 30 September 2001.

FMD was controlled by the slaughter of infected animals and animals that were judged to be dangerous contacts. More than three million sheep, 500,000 cattle and 140,000 pigs were killed, from more than nine thousand holdings. Approximately two million additional animals were slaughtered under the Livestock Welfare Disposal Scheme, bringing the total to more than 6 million animals. On the basis that no cases of FMD had occurred for three months and extensive statistically based serological surveys, every administrative area in Great Britain had achieved FMD free status by 14 January 2002 – three and a half months after the last outbreak was confirmed. The European Commission recognised Great Britain's FMD-free status through Commission Decision 2002/153/EC of 20 February 2002 which repealed requirements to provide FMD related certification for intra-community trade. Further information about the 2001 FMD epidemic can be found on the DEFRA website <http://defraweb/footandmouth>.

The FMD epidemic impacted upon surveillance in two distinct ways. Firstly, the outbreak caused significant disruption to normal farming

practice with unpredictable consequences for the incidence of infection. Secondly, surveillance activities were constrained. VLA laboratories were unable to accept samples from infected areas and cattle, sheep or pig carcasses from any areas between late February 2001 and October 2001. Field visits were halted from late February 2001 but essential visits were later permitted providing strict Agency procedures were followed.

Cattle submissions to the VLA Regional Laboratories (RLs) were reduced by 36.9% in comparison to 2000 and the eight-month prohibition of any carcass movement for diagnostic purposes resulted in a 77.4% reduction in cattle carcass diagnostic submissions. Sheep submissions to the laboratories were severely restricted from the end of February for the remainder of the year, and in total there was a 64% decline in England and Wales. However, scrutiny of the January and February data notes that early year data was comparable with the previous year. Diagnostic submissions, particularly carcass submissions, were also significantly reduced in 2001 for pigs and goats.

## **TRENDS IN 2003: LIVESTOCK POPULATIONS AND WEATHER CONDITIONS**

Changes in both the total number of animals in each category of livestock and the climatic conditions over the year may affect the overall disease situation, and thus the totals recorded in this publication. A summary of both is therefore given below.

The 2003 livestock data is taken from the June Agricultural Census figures (MAFF statistics 2003) for Great Britain. In editions of this booklet before 1997 the livestock figures published were taken from the December census and have covered United Kingdom. Because of this difference, the livestock data presented in this and future editions of the VIDA booklet cannot be directly compared to that in editions of the book prior to 1997.

The information on weather conditions has been obtained from Royal Meteorological Society monthly reports for 2003.

### **Livestock population**

#### **Cattle**

#### **Cattle**

The total cattle population, including calves, in Great Britain rose by 1.4% in 2003 to just over 8.8 million animals.

#### **Dairy Cattle**

The total dairy herd fell by 1.5% in 2003 and currently stands at just over 2 million

## **Beef Cattle**

There was an increase of 3.2% in the total beef breeding herd in 2003 to just under 1.5 million

## **Sheep**

There was a small increase (0.8%) in the total sheep population including lambs increased in 2003 and the national flock now stands at just over 30 million. There was also an increase in the total adult sheep flock which rose by 0.11% to just under 17 million.

## **Goats**

The total goat population decreased by 4.4% in 2003 to just under 86,000 animals.

## **Pigs**

There was a decrease of 11.5% in the total pig population in 2003 which now stands at just over 4.5 million.

## **Poultry**

The total number of laying fowls for eating egg production increased by 1.6% to just over 28 million. There was also an increase in the number of broilers and other table fowls which rose by 5.3% to approximately 10.4 million.

## **Meteorological data**

For the location of the weather stations referred to in Figures 1 and 2 please see the map inside the back cover.

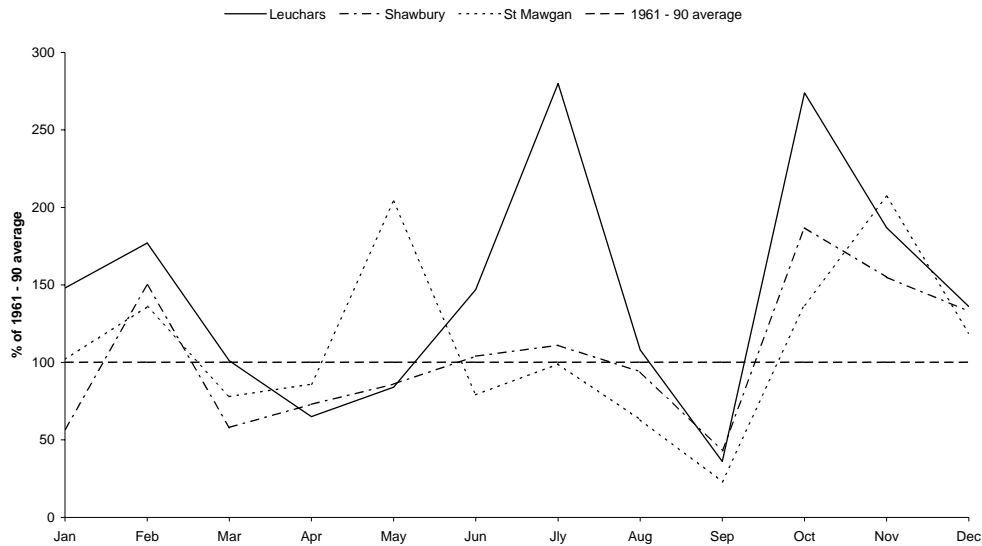
Although the very beginning and end of January were cold, the remainder of the month was mild. The heavy rain of December 2002

continued for the first few days of January, with flooding on several rivers in southern England and there was widespread snow in Scotland. Snow also fell in eastern Scotland and England on the last few days of the month, causing disruption in South East England.

The heavy snow continued in many areas for the first few days of February, before mild westerly winds brought about a thaw. For the rest of the month there were outbreaks of rain and extensive cloud cover, with parts of south-east England seeing no sunshine for almost a week. Overall, it was the driest February since 1998.

Changeable weather dominated the first ten days of March and it was generally mild and windy. Although it was the warmest March only since 1998, a few places recorded their highest March temperatures since 1938. April was mostly dry and sunny, although there were occasional sharp, overnight frosts in some areas of Scotland. During the last week of the month periods of heavy rain alternated with brighter, showery weather and in some areas there was hail. It was the warmest April since 1987 and the driest since 1990.

Fig 1: Rainfall as a percentage of the 1961 - 90 average at three places in Britain in 2002

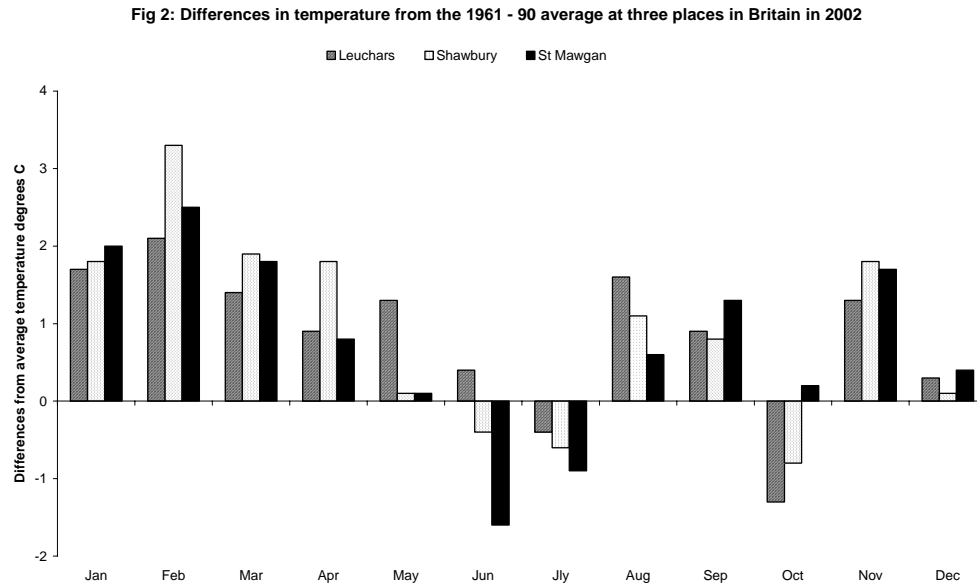


The first three weeks of May were changeable with outbreaks of, often heavy, rain. Almost all regions were wetter than normal, with areas of south-west Scotland, northern England and North Wales having more than twice the usual rainfall for May. June was the warmest since 1976 and rainfall was, for most areas, higher than normal. During the beginning and middle of the month many places experienced thunderstorms and there was localised flooding. Sunshine levels were up to 30% below average in some western and northern regions, but above average in parts of the Midlands and eastern England.

July was also changeable, however rainfall was well below average in some eastern regions. The second week of July was particularly hot with one weather station in south-east England recording the highest July temperature anywhere in the UK since 1989. The remainder of the month, although warm, was cooler with periodic and often heavy rain.

In contrast August was dry, and averaged over England and Wales, it was the fourth driest August in the last 100 years. Apart from the third

week of the month, when it was cooler, all areas had sunny and very warm weather and it was the fifth warmest August on record.



The dry, sunny and warm weather continued until the last week of September when a cold front swept across the whole country bringing rain to many areas, for parts of Bedfordshire, Hertfordshire and Cambridgeshire it was the first appreciable rainfall since the end of July. Although it was warm during the day the nights were unusually cool in some areas, and in central England it was the warmest September by day since 1959 and the coolest by night since 1993. Over England and Wales it was the driest September since 1997 and the sunniest since 1964.

October, although sunny, was the coldest since 1993. Most areas were dry until the last few days of the month when there were long periods of heavy rain almost everywhere.

In contrast to the cold October, November was the tenth warmest in the last 100 years. The first three weeks of the month were mostly dry, but this was followed by prolonged steady rain over much of southern and western England and the Midlands. This prolonged rain then spread northwards into Scotland during the last few days of the month. November rainfall percentages ranged from 230% of normal in parts of south-east England to 40% in parts of eastern Scotland and north-east England.

December was another changeable month, although most areas saw more sunshine than usual. At the beginning of the month there was sunshine during the day but fog and frost at night and this was followed by a period of cloudier weather with wintery showers. During the third week of December there was snow in northern and eastern Scotland and eastern England, but this was followed by milder conditions with rain and sleet which spread down the country towards the south coast.

## DISEASE TRENDS IN 2003

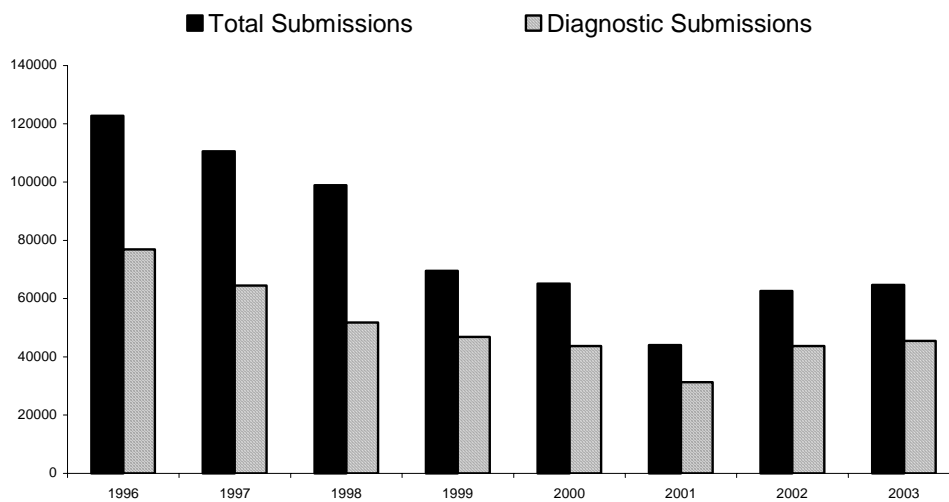
### CATTLE

#### General

In 2003 recovery from the 2001 Foot and Mouth Disease outbreak was effectively completed with dairy and beef farming having adjusted to the post movement restrictions.

This was illustrated by the total number of cattle diagnostic submissions exceeding the 2000 total. (45,496 as compared to 43,714).

Fig 4: Total cattle submissions in GB 1996 - 2003



2003 was the fifth warmest year on record with prolonged dry spells (See Figs 1 and 2). This was widely reported to have caused decreased milk yields and fertility through suppression of appetite. Also there were widespread reports of individual dairy cows exhibiting transient hyperventilation, particularly after the afternoon milking.

Ironically increased calf pneumonia during both the spring and autumn was also considered to be associated with the unusual weather conditions, and due to differences of up to 25°C between day and night time temperatures.

### **Respiratory Disease**

It is interesting to note for the number of calf respiratory pathogens recorded that *Pasteurella multocida* and *Haemophilus somnus* were the highest recorded over the previous eight years. There was little change, excluding 2001, in the number recorded for *Mannheimia haemolytica* and a decrease in the number of RSV diagnoses over the same period.

Again if 2001 is excluded there was a decline in the number of Husk cases in comparison to previous years. For Malignant Catarrhal Fever there was little change in the number of diagnoses recorded, refuting the concern in 2002 that the disease may be increasing.

### **Reproductive Disease**

The number of official BS7 *Brucella* abortion submissions has reduced compared with the numbers examined in 1999, 2000 and 2002 which were all similar. This is probably due to the number of dairy herds ceasing production because of the economic difficulties caused by farm milk prices. There was a single abortion due to *Brucella abortus* in 2003; this was part of the incident involving importation of cattle from Northern Ireland, which started in 2002. Appropriate steps were taken to ensure that Great Britain retained its EU "Official Brucellosis-Free Status".

The proportion of abortions caused by *Neospora caninum* has increased and the numbers of *Neospora* abortions each month have been constant through out the year. *Neospora* abortions continue to

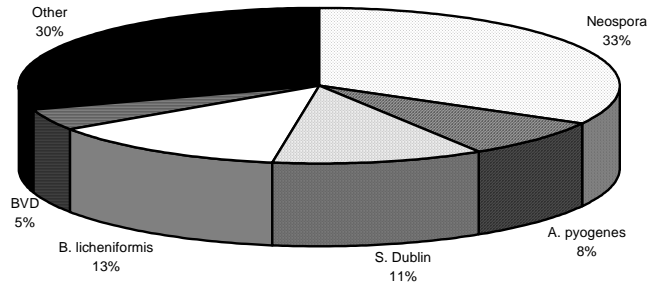
present as either endemic herd infections causing a higher than acceptable ( $\leq 3\%$ ) foetal wastage rate in the herd, or abortion storms where the epizootic curve suggests a point source of infection. The complete aetiology of *N. caninum* infection remains obscure.

Leptospirosis continues to decline in importance to only 0.5% of total abortion diagnoses. The introduction of more stringent diagnostic criteria in 2001 should no longer be having any influence on the data, so this decline is likely to be a genuine phenomenon. The reason may be that *Leptospira hardjo bovis* vaccination is becoming widely used once more in dairy herds after many discontinued vaccination several years ago as a cost-cutting measure. Nevertheless, it is possible that leptospirosis remains common in beef suckler herds where in-depth abortion investigations are rarely carried out.

Other causes of abortion have remained remarkably constant over the years suggesting that the majority of diagnosed bovine abortions are sporadic events associated with random infections.

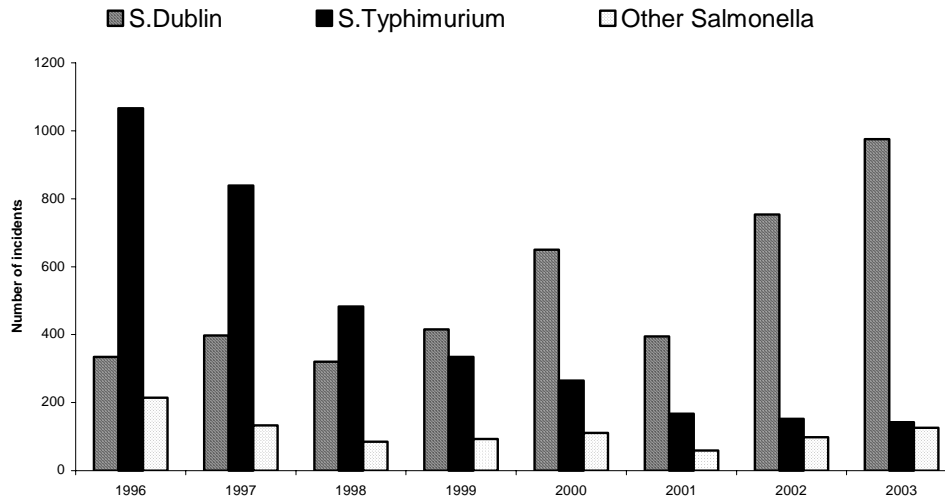
Congenital abnormalities were widely encountered. The annual total however was similar to previous years.

Fig 5: Diagnosis of bovine fetopathy in 2003 (excluding "fetopathy diagnosis not reached") as a percentage of all bovine fetopathy diagnoses (n=1111)



## Alimentary System

Fig 6: All incidents of salmonellosis other than fetopathy in cattle 1996 - 2003



*Salmonella*. Typhimurium is at an eight year low and S. Dublin at an eight year high. The fall in S. Typhimurium is largely as a result of the spontaneous reduction of S. Typhimurium DT104 in the national herd. It is uncertain whether this latest example of the rise and fall of

“epidemic” strains of *Salmonella* Typhimurium in cattle is caused by a gradual degradation of virulence associated with phage infection or other genetic change, or a high level of herd immunity following widespread exposure of breeding cattle from previous years. This fall has effectively allowed a rise in the incidence of the cattle adapted serotype *S. Dublin* with which many herds are endemically infected. *S. Typhimurium* fetopathy is now a comparatively rare event. It is also surprising that *Salmonella* *Dublin* fetopathy has also fallen in this period from a peak of 182 cases in 1997 to 91 in 2003.

### Calf Scour

**Table 2: Neonatal calf scours – pathogens expressed as percentage of cases recorded**

Pathogen	1996	2003
Rotavirus	48%	47%
Cryptosporidia	34%	43%
Coronavirus	18%	10%

The table illustrates there has been no overall change in the order of calf scour pathogens, with rotavirus and cryptosporidia frequently in combination, remaining the main causes. Many cases of neonatal calf scours are predisposed to by hypogammaglobulinaemia, and it is pertinent to note over this eight year period that there has been essentially no change in the number of cases of hypogammaglobulinaemia recorded.

The number of coccidiosis cases in 2003 were notably reduced in comparison to previous years, excluding 2001.

## Parasitic

Similarly there was a reduction in the number of parasitic gastroenteritis diagnoses in comparison to previous years. It is also recognised that seasonal patterns are no longer evident, with diagnoses being recorded in every month of 2003.

This reflecting a succession of mild winters, which is also illustrated by the fact that type 2 *Ostertagiasis* is now only rarely encountered.

Fig 7: All incidents of fasciolosis in cattle in 1996 - 2003



Though the weather in 2003 was significantly different to previous years with most months being much drier and sunnier than average, the incidence of fluke infection in cattle continued to increase. One possible explanation is that cattle may have favoured grazing near ponds and watercourses where there was better grass growth. These pastures are more likely to have been infected, being the habitat of the intermediate snail host *Lymnaea truncatula*.

## BVD

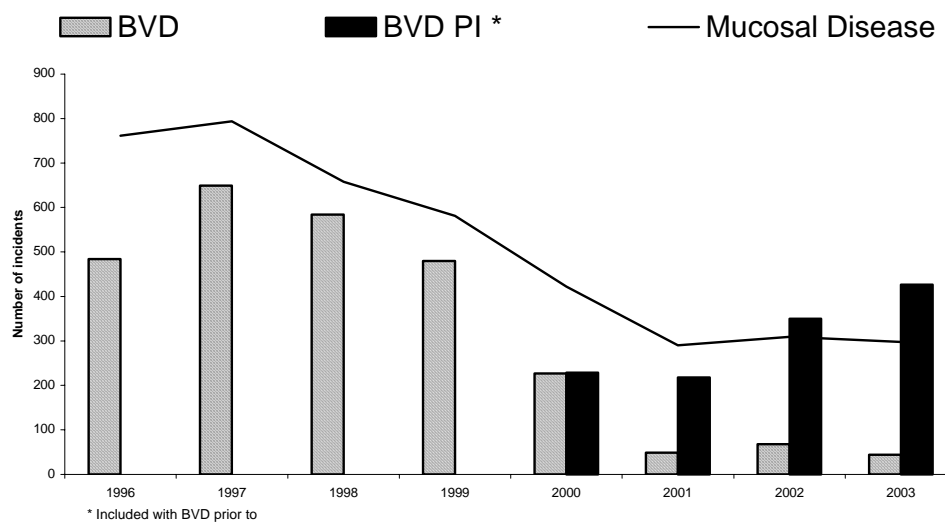
“Acute BVD infection” continues to be infrequently diagnosed when compared with the other two diagnoses, consistent with the impression

that infection is mostly subclinical. It has been associated with dairy cattle who present with pyrexia, transient milk drop, variable scour, and an increased respiratory rate although on rare occasions in previous years it has caused a much more serious and occasional fatal enteric syndrome in dairy cows. Seroconversion to BVDV is occasionally seen when investigating respiratory disease in calves but almost invariably with the involvement of other respiratory viruses.

There has been a slight increase in the number of incidents of “BVD viraemia” so that these animals out-number cases of mucosal disease, another consequence of intrauterine infection.

Anecdotal evidence suggests that more herds are using vaccination to control this disease. When problems are reported, such as the birth of viraemic animals by vaccinated dams, careful history and sample taking may reveal in some instances that the dam is herself viraemic or that she was not vaccinated correctly.

Fig 8: All incidents of BVD in cattle in 1996 - 2003



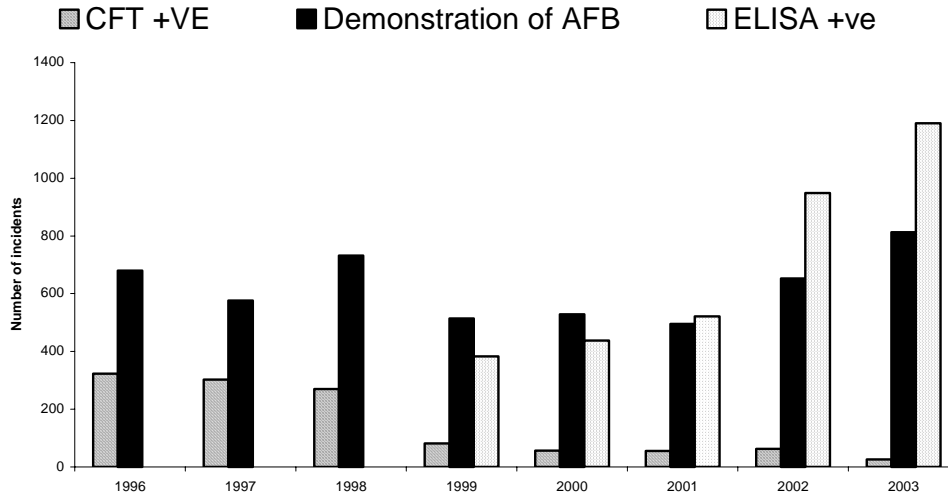
Johne's

In keeping with the last two years the number of incidents of Johne's Disease has continued to increase significantly – the figures for “demonstration of AFB” and “ELISA positive” have both increased by 25% on last year. This probably reflects an increased awareness and that more groups of animals may be screened by the ELISA test. A number of incidents were associated with animals purchased onto farms restocking after FMD. Whether clinical manifestation follows “stress” or reflects local changes such as soil pH it is impossible to say but interesting to speculate.

There are however, some misconceptions about the disease; for example one farm purchased a bull which within three weeks had developed a scour and typical clinical signs and was confirmed as a case. It was proposed that a replacement bull was to be purchased from the same herd of origin until veterinary advice was given that another source should be chosen, preferably with some comment about the Johne's Disease status of the herd.

Requests for advice on the control of this disease in infected herds are being received more often and this can be a difficult topic. In commercial dairy herds vaccination would appear to be one method receiving more consideration, in association with advice on animal and farm management to try and prevent new infections and keeping young animals (less than 12 months) apart from older animals.

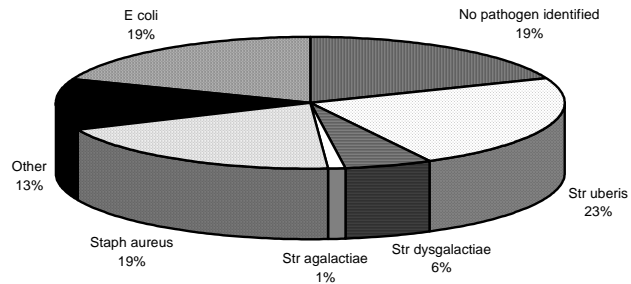
Fig 9: All incidents of Johne's Disease in cattle in GB 1996 - 2003



## Mastitis

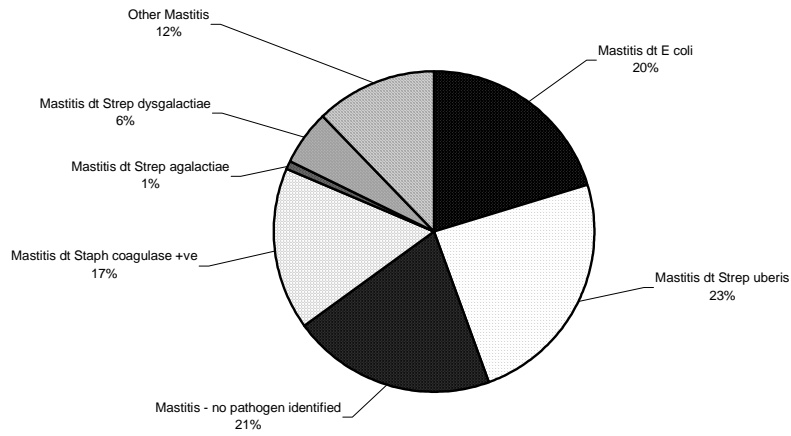
The relative proportions of major mastitis pathogens diagnosed in all mastitis submissions during 2003 are shown in Figure 10.

Fig 10: All incidents of mastitis in cattle in Great Britain as a percentage of total mastitis diagnoses in 2003 (n=6267)

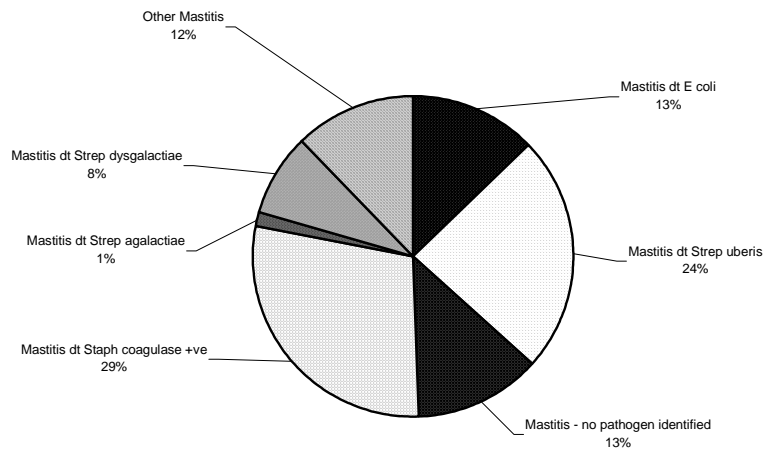


The relative proportions of major mastitis pathogens diagnosed in clinical and subclinical cases respectively by the VLA during 2003 are shown in Figures 11 and 12.

**Fig 11: Clinical mastitis in cattle by pathogen in 2003 (n = 3951)  
(VLA diagnoses only)**



**Fig 12: Sub-clinical mastitis in cattle by pathogen in 2003 (n =981)  
(VLA diagnoses only)**



The decrease in clinical mastitis diagnoses attributed to *E. coli* in recent years (20% in 2003 compared to 27% in 2000) is interesting. It is tempting to speculate that this decrease may be associated with recent developments in *E. coli* mastitis control such as the availability in the UK of a vaccine for coliform mastitis and a more rational approach to the

prescription of antibiotic dry cow therapy. However, another possible explanation for the decrease is the introduction of the VIDA diagnostic criteria in 2001, with the requirement of positive pure culture for a VIDA diagnosis of *E. coli* mastitis.

*Strep. uberis* appears to remain a significant cause of both clinical and subclinical mastitis. It has been suggested that new products and/or procedures are required to reduce the incidence of mastitis caused by this organism and vaccines have been highlighted as a possible means of future control. *Staph. aureus* appears to remain a significant cause of both clinical and subclinical mastitis despite the fact that well established control measures have existed for many years.

### **Miscellaneous Conditions**

The form of traumatic reticulo peritonitis, previously colloquially known as Wire Disease, and now renamed as “Tyre Wire Disease” was widely encountered as the cause of sporadic deaths, usually in dairy cows. The wire having changed from bale wire to tyre wire, and source being deteriorating tyres used to weight down plastic sheeting covering silage clamps.

Another “old condition” is navel ill-joint ill, which should be readily controlled by appropriate management procedures, continues to be regularly encountered.

## SHEEP

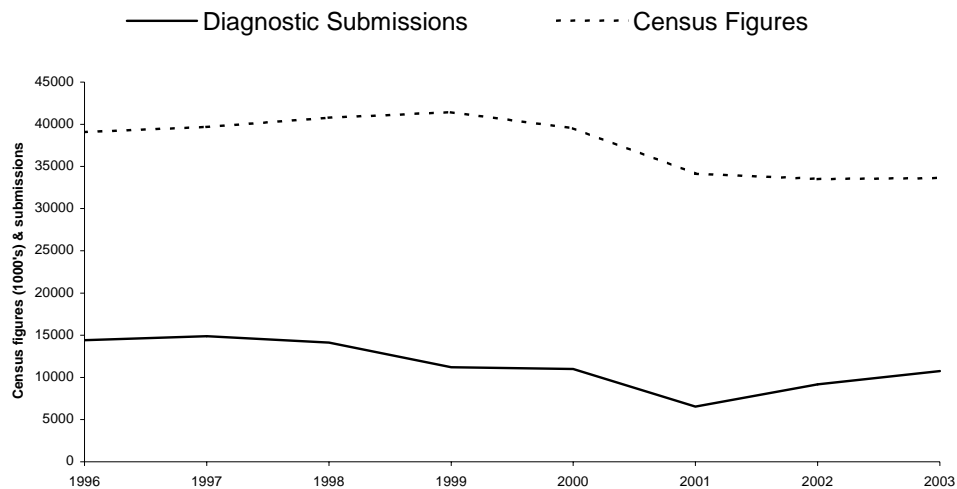
### General

Excellent weather was experienced from the early spring until late autumn. This provided ideal conditions for lambing in most areas and a good start for growing lambs; however the dry conditions experienced hampered finishing times in some areas.

Sheep prices were maintained throughout the year with finished lambs values around 10% higher than 2002. The year started with figures of around 250p/kg dw and peaked in mid-May at just under 350p/kg dw finishing the year at approximately 250p/kg dw. Cull ewes also showed an improvement on 2002 with values of around £37 obtained at the end of the year. The strength of the euro against the pound and only a modest recovery in the number of breeding ewes to around 16.5 million are likely contributory factors to the buoyant market.

### Submissions

Fig 13: VIDA sheep diagnostic submissions vs total GB sheep population 1996 - 2003



The overall number of diagnostic submissions increased by approximately 17% to 10,728 compared with 9,165 in 2002. This welcome increase in submissions followed on from the increase seen in 2002 continuing the recovery post FMD.

### **Reproductive disease**

Submissions of abortion material increased by approximately 14%, reflecting the general increase in submissions. A diagnosis was reached in approximately 54% of submissions, an increase compared with 2002 (50%). *Chlamydomphila abortus* remained the most commonly diagnosed cause of ovine abortion with 40% of diagnoses. This figure was slightly lower than in 2002 (44%). Toxoplasma (25%) and *Campylobacter* (14%) continued as the second and third most common diagnoses recorded. Twenty-four incidents of fetopathy were associated with *Salmonella* Dublin infection, a reduction compared with 2002 (29 incidents). The number of incidents recorded in the category 'fetopathy due to other *Salmonella* serotypes' increased this year and was due principally to an increase in the number of incidents associated with *Salmonella diarizonae* and *Salmonella* Montevideo.

### **Respiratory Disease**

There were 13 incidents of maedi-visna (MV) infection, the highest figure recorded on VIDA since 1983. The typical presentation in cases of MV infection is respiratory disease, with nervous signs of visna rarely recorded in Great Britain and usually only seen in heavily infected flocks. The year was unusual when at the end of 2003 multiple cases presenting as primary neurological disease (visna) were confirmed in two flocks. MV virus infection is likely to be much more widespread in the UK sheep population (particularly commercial cross - bred flocks obtaining breeding replacements from markets) than reports of clinical disease suggest. Most infection is subclinical and overt disease not

usually evident until within - flock seroprevalence exceeds about 60 percent

Sporadic cases of ovine pulmonary adenocarcinoma (OPA) were diagnosed during 2003 and the number of diagnoses was largely unchanged from previous years. As with MV, much of the disease is unrecognised and farmer awareness is generally low.

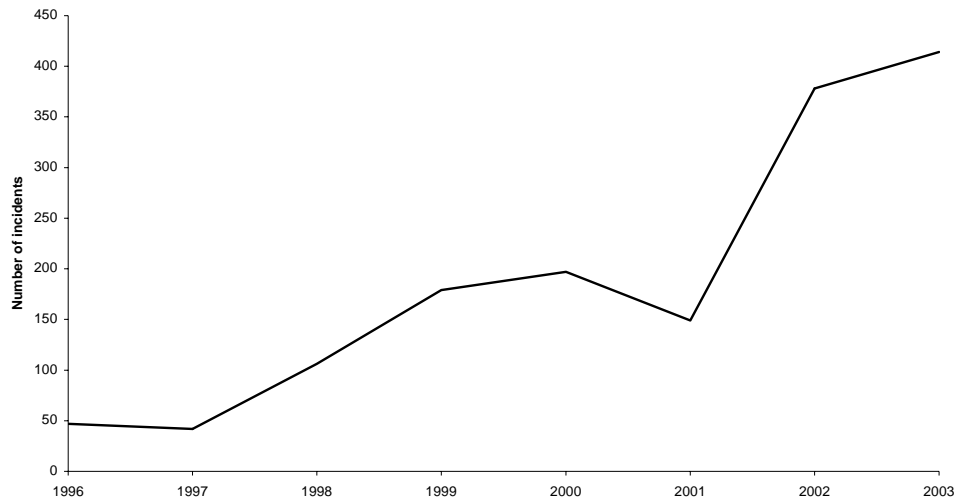
The number of diagnoses of pneumonia due to *Mannheimia* (formerly *Pasteurella*) *haemolytica* was the highest since 1997. The number of recorded incidents was around 70% higher than 2002. The cause of this is unclear, but could be due to reduced vaccine usage and changing weather conditions in the autumn.

### **Alimentary disease**

The number of diagnoses of acute fasciolosis in sheep in 2003 was much less than seen in the previous four years. This was due to the prolonged dry weather in the summer through to November. This dryness had a detrimental effect on the transmission of infection and also the viability of the snail intermediate host. The number of black disease incidents, caused by *Clostridium novyi*, and usually associated with migrating immature fluke, was also reduced (14 incidents in 2003 compared to 27 in 2002). In contrast chronic fasciolosis was diagnosed more commonly than in 2002. Cases of chronic fasciolosis were likely to occur in 2003 for a number of reasons. These include (a) the continuation of infestation from the winter of 2002-2003, (b) the maintenance of parasite and the intermediate host in localised wet areas in 2003, which were more likely to have been grazed by sheep in the drier weather and (c) the smaller numbers of metacercariae infecting sheep in endemic areas causing chronic liver damage, rather

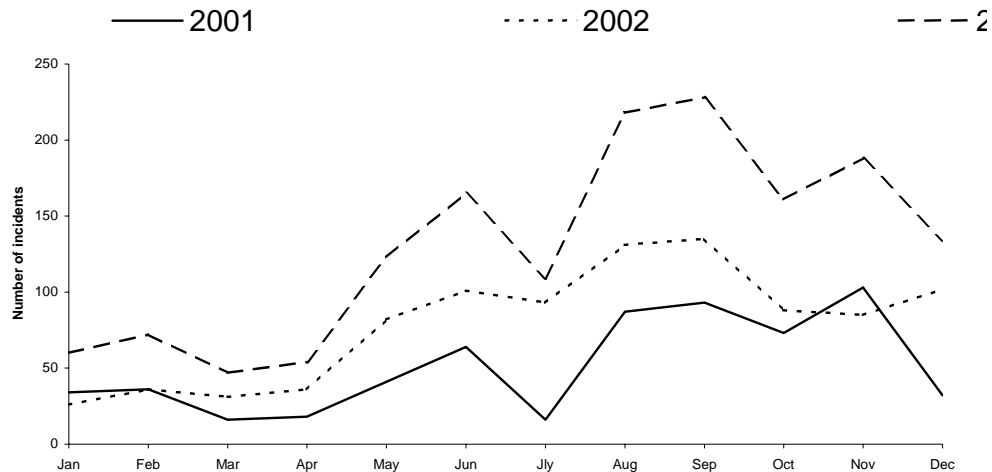
than larger numbers causing massive liver destruction and death as seen in acute fasciolosis.

Fig 14: All incidents of fasciolosis in sheep in 1996 - 2003



Parasitic gastro-enteritis (PGE) continues to be a common diagnosis with more incidents recorded in 2003 than the previous year. The dry weather in the summer led to a reduction in diagnoses during July. However, disease was then seen commonly through to the end of the year. This has been a consistent feature over the last few years with the continuation of PGE through mild, wet autumn and winter periods.

Fig 15: All incidents of PGE - including haemonchosis, nematodiriasis and not otherwise specified in sheep 2001 - 2003



*Nematodirus battus* was a major problem in May and June. The classical trigger for nematodirosis of a cold spell followed by warm weather did not precede this disease outbreak. The trigger for the mass hatch of larvae may have been wet weather in May following dry weather in late spring. There was no evidence of a large number of incidents of autumn nematodirosis following the problems in the spring.

Lamb dysentery and pulpy kidney disease (PKD) were again identified in unvaccinated flocks. Typical PKD does also seem to have been seen unusually commonly in very young lambs (1-2 days old upwards).

### Miscellaneous conditions

Diagnoses of systemic disease due to *Salmonella* Typhimurium DT104 remained at a low level following the epidemic, which peaked in the mid 1990s. In contrast the number of diagnoses of systemic disease due to *Salmonella* Dublin showed an increase compared with 2002.

Listeriosis was confirmed on 107 occasions as a cause of encephalitis compared with 78 incidents in 2002. Clamp silage, bagged or wrapped

silage, haylage, big round bale hay and normal hay bales were all reported respectively as the forage source in outbreaks, demonstrating that the disease is not just associated with big baled silage.

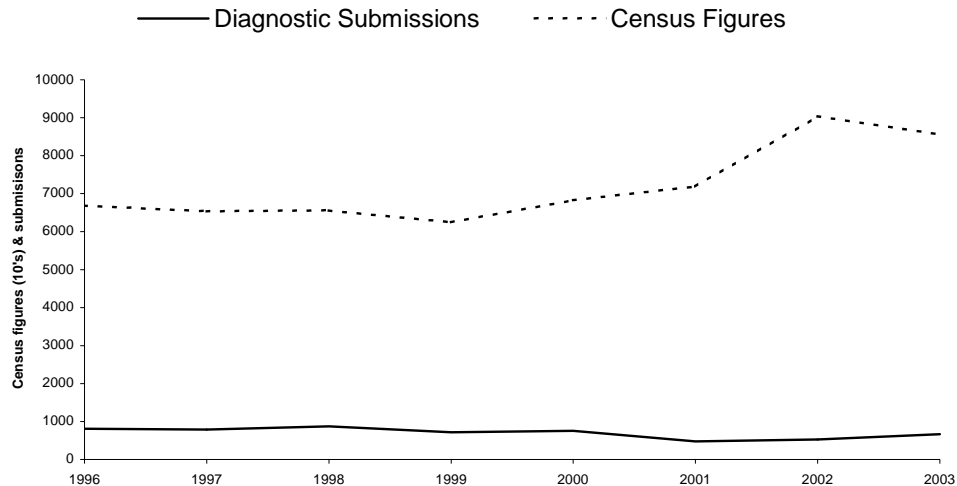
Tick-borne or associated diseases were reported by several centres, with many areas anecdotally reporting the emergence of large numbers of ticks this spring. Forty-five incidents of Louping Ill were recorded, the largest number recorded on VIDA since 1995. Some of these outbreaks were described as severe causing significant losses.

Copper poisoning was diagnosed on 77 occasions, an increase of approximately 50% on the number in 2002 and the highest number of incidents recorded since 1998. Sheep are particularly susceptible to copper toxicity and disease is often associated with prolonged feeding of concentrate feed rather than gaining access to extraneous sources of copper.

The number of incidents of ectoparasitic disease recorded on VIDA is likely to represent a significant underestimate of disease prevalence, as a diagnosis is often not sought prior to treatment. Although sheep scab (*Psoroptes ovis*) remains the most common diagnosis, other ectoparasitic diseases (predominantly louse infestation) accounted for 24% of diagnoses. As some licensed products are not effective against both sheep scab and louse infestation it is clearly important that a diagnosis is sought when these products are used.

## GOATS

Fig 16: Goat diagnostic submissions vs total goat population in Great Britain  
1996 - 2003



The dairy goat sector has maintained its market, with a reported increased interest by UK supermarkets in goat dairy products. The dairy hygiene inspectorate website ([http://omega/dairy/stats/current\\_stats.htm](http://omega/dairy/stats/current_stats.htm)) records 130 registered goat milk producers in England and Wales with many smaller unregistered units producing milk for home consumption. These herds vary in size from 1 goat to 2500 goats, with an average herd size of 211.

Although the goat fibre and goat meat markets are relatively small sectors, there is a continued interest in keeping goats as pets and for hobby “showing and exhibiting.”

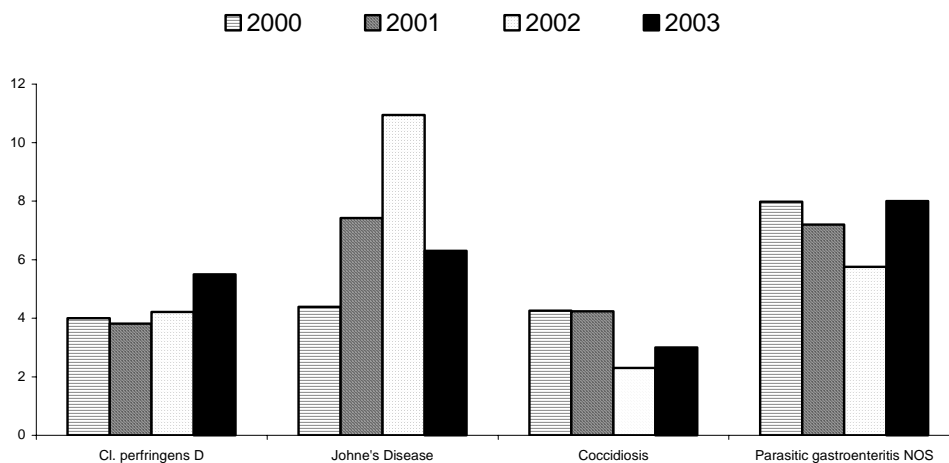
There were 1363 submissions in total during 2003, an increase on the 2002 figure of 1092 (+24.8%). Of these:

- **719** were “diagnostic” submissions (see Fig 14) (52.8% of total submissions)

- **292** had a listed VIDA diagnosis (40.6% of diagnostic submissions). Of these, 229 (78.8%) made from 2 disease classifications (digestive / systemic);
  - **186** diagnoses recorded as diseases of digestive system (63.7% of all listed diagnoses), of which 4 most frequent diseases;
    - **53** PGE NOS (28.5%)
    - **42** Johne's Disease (22.6%)
    - **37** *C. perfringens* Type D (19.9%)
    - **20** Coccidiosis (10.8%)

Figure 17 shows these diagrammatically.

Fig 17: All incidents in goats in Great Britain as a percentage of total diagnostic submissions



Where a diagnosis is reached, digestive disease and systemic disease account for 78.8% of diagnoses. Digestive disease alone accounts for 63.7% of listed diagnoses, with PGE NOS being the most frequent.

After a steady rise in diagnoses of Johne's Disease, 2003 saw a slight reduction. Many larger commercial herds have confirmed this condition in the past few years, and have had some success in controlling infection by vaccination. VLA Johne's vaccine sales to goat owners supports this, with goat kid vaccine sales running at approximately 65% of calf vaccine sales (NB 1 calf dose = 2 kid doses – therefore goat dose figures comparatively higher).

Clostridial enterocolitis (principally involving *C perfringens Type D*) continues at a relatively steady rate. Although there is a licensed vaccine available, regular boosters are required to maintain protection.

Most cases of parasitic gastroenteritis (PGE) occur in the smaller pet and hobby goat sector, where goats are kept at grass. Their inability to produce solid immunity following exposure will quickly result in heavy pasture contamination. All commercial goats are housed all year round, thus eliminating PGE.

The "Diagnosis not Reached" codes "Systemic" (961), and "Digestive" (962) were again the highest categories in this section, both showing an increase on the 2002 figures. Conversely, the code Diagnosis not Reached "Skin" (967) which is the third highest category in this section remains static.

The non-diagnostic submissions were broken down as follows:

- **342** screening submissions (25.1% of total submissions)

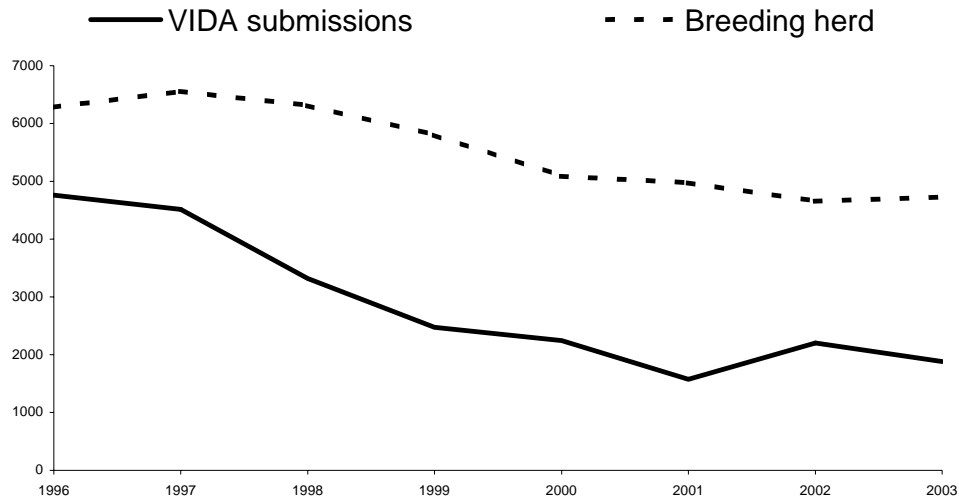
➤ **302** diagnosis not applicable (22.2% of total submissions)

Many of these were for Caprine Arthritis Encephalitis (CAE) screening, and two large commercial herd incidents are currently (2004) being investigated.

## PIGS

### General

Fig 18: VIDA diagnostic pig submissions vs pig breeding herd 1996 - 2003



The national breeding herd for England and Wales stabilised with a very slight increase to 101.5% of last year's population. This follows five previous years of decline. The EU increased in size during 2004 with a number of large pig producing countries, such as Poland joining. This will probably impact on sow numbers in the future.

### Reproductive Disease

The fetopathy diagnostic rate fell to 34% on last years figure of 45%. However, it is more comparable to the pre-FMD (2000) level of 37%. One major problem is that many cases of porcine fetopathy are not infectious. These are very difficult to substantiate. However, the VLA is addressing problems of confirmation of infectious causes. The new porcine reproductive and respiratory syndrome (PRRS) virus PCR and spin-offs from our Leptospirosis project will aid diagnoses of these causes of fetopathy.

## **Respiratory Disease**

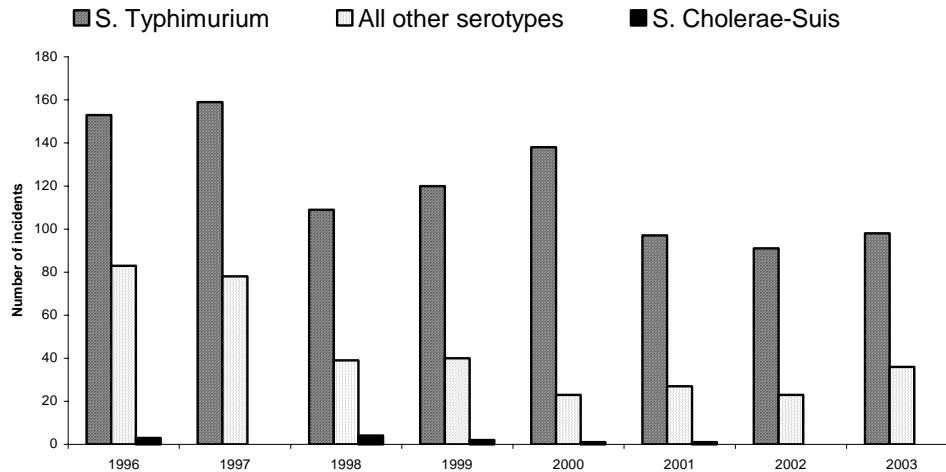
Respiratory disease was diagnosed in 17.1% of diagnostic submissions (2002 - 15.9%, 2001 - 19.8%). *Pasteurella multocida* pneumonia was the commonest, with 31.9% (2002 - 26%), just ahead of the usual main diagnoses of "pneumonia not otherwise specified" 31.2% (2002 - 31.1%). However, the caveat is that in many of these cases there is often underlying postweaning multisystemic wasting syndrome (PMWS)/porcine circovirus type 2 (PCV2) involvement as the precipitating factor.

Influenza as the zoonoses has been increasingly in the press, and the VLA continues to monitor disease in pigs.. This year 21 incidents of swine influenza were recorded (2002 - nine). This is in line with the 20 incidents recorded in 2000. No new influenza virus strains were detected however.

## **Alimentary Disease**

Diseases causing enteropathies were recorded in 14.3% of diagnostic submissions (2002 - 14.5%). The marked drop in swine dysentery as anticipated last year continued, with only a 6.9% diagnosis rate this year (2002 - 13.4%, 1998 - 20.5%).

Fig 19: All incidents of *Salmonella* Typhimurium and *Salmonella* Cholerae-Suis in pigs 1996 -2003



The number of incidents of *Salmonella* Typhimurium increased only slightly to 98 (2002 - 91). This suggests that increased surveillance in advance of the ZAP (Zoonoses Action Plan) did not materialise. However, these figures in the main include herds where there is clinical evidence of salmonellosis, rather than only sub-clinical infections. An increase in identification of infected herds may occur in the next few years as herds with a ZAP 3 score in January 2004 will have to investigate and take action to improve salmonella status.

### Other Conditions

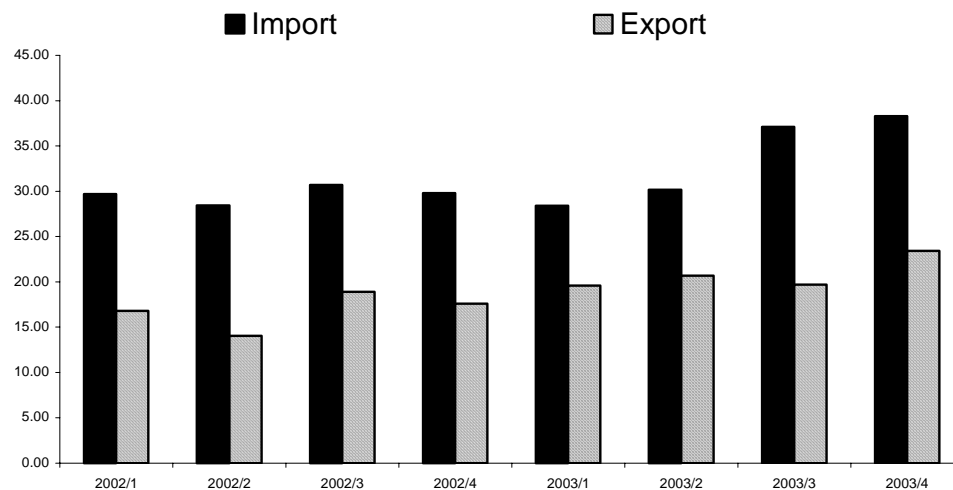
PMWS/PCV2 infection continued to dominate disease problems on many units. Outbreaks often occur with other conditions especially respiratory and enteric diseases. The first case in farmed purebred wildboar was confirmed this year. PMWS and porcine dermatitis and nephropathy syndrome PDNS accounted for 12.7% of all diagnostic submissions.

## BIRDS

### General

Overall, the commercial poultry population, placing and production figures, aside from seasonal fluctuations, have continued to show a steady rise over recent years with 2003 being no exception. Most notable has been the rise in poultry meat imports seen in the later half of 2003 (see Figure 20).

Fig 20: Total Poultry Meat Trade 2002 - 2003 (average monthly figures)



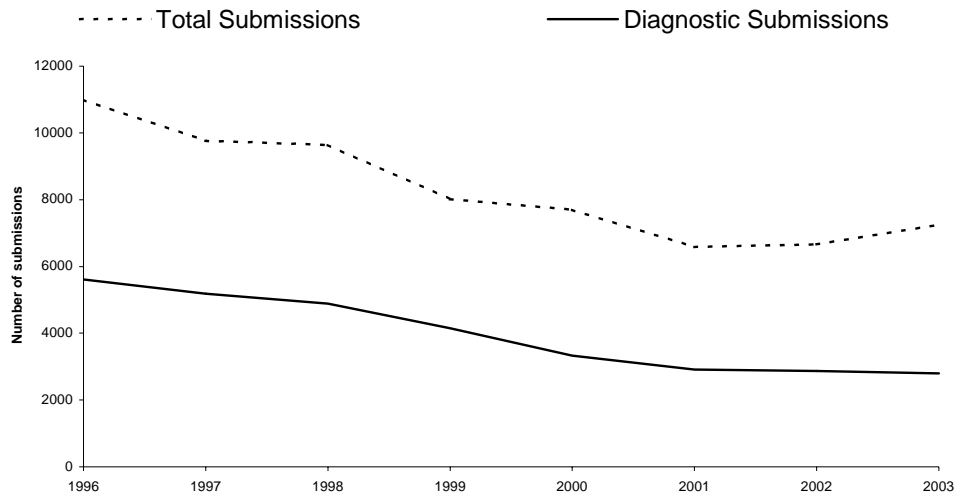
The year 2003 may be best remembered for the epizootics of Highly Pathogenic Avian Influenza (HPAI) in the Netherlands during the spring, subsequent incursions into Germany and Belgium and the spread of HPAI across the Far East. The threat of HPAI caused major concern to the UK poultry industry and global markets and heightened awareness of the importance of biosecurity on all types of poultry unit.

The rise in cereal prices during the latter half of 2003, reaching in excess of £100/tonne for feed wheat by the end of the year, also prompted concerns and cost cutting measures across the industry.

## Submissions

The downward trend in numbers of diagnostic submissions of poultry and gamebirds, recorded from 1996 to 2002, has slowed with only a 2.4% decrease in the total number of diagnostic submissions recorded on the previous year. This is attributed to an increase in diagnostic work undertaken by private veterinary practices or diagnostic laboratories, predominantly serving the larger commercial and integrated sectors of the poultry industry, therefore not contributing to VIDA. Submissions from smaller commercial producers, including free-range poultry, backyard and hobby flocks and gamebirds dominate VIDA data, which continues to provide both a snapshot and trends of poultry disease principally in these sectors.

Fig 21: Total bird submissions in GB 1996 - 2003

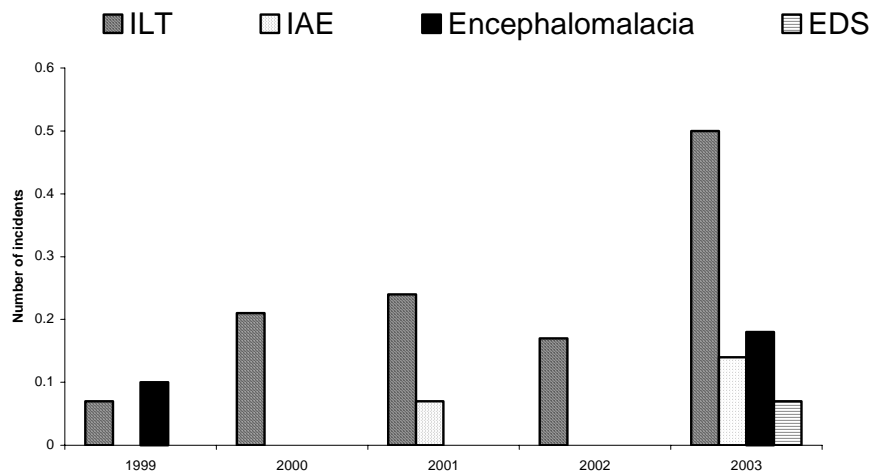


## Domestic Poultry Disease Trends

The major viral diseases of domestic poultry, including Infectious Bronchitis, Marek's Disease and Infectious Bursal Disease (Gumboro)

continue to be diagnosed. An increase in the number of Infectious Laryngotracheitis (ILT) and Infectious Avian Encephalomyelitis (IAE/Epidemic tremor) diagnoses was recorded in 2003 (see figure x). Egg Drop Syndrome 1976 (EDS 76) was diagnosed twice in 2003, the first recorded incidents since 1996 of this disease. In commercial production systems vaccination remains a lynchpin for effective control of the major viral disease of economic significance, particularly in enzootic areas and flocks. However, economies of scale often predicate against vaccination of backyard or hobby flocks, which in effect act as sentinels for circulating viral infections. The rise in ILT diagnoses can be largely attributed to disease in smaller, unvaccinated flocks. IAE diagnoses have occurred following apparently unsuccessful vaccination of parent flocks.

Fig 22: All incidents in birds in Great Britain as a percentage of diagnostic bird submissions 1996 - 2003



Incidents of neurological disease due to IAE and encephalomalacia (Vitamin E-related) have been uncommon. Encephalomalacia was last diagnosed in 1999. Both of these neurological conditions were detected on at least one occasion in young broilers reared in free-range, organic systems, raising the concern that diseases considered rare in

conventional, intensive poultry systems may be encountered more commonly under husbandry systems that limit certain feed or management practices routinely used by conventional growers.

Fowl cholera, due to *Pasteurella multocida*, of importance because of possible trade implications, showed an increase in the number of diagnoses compared with the previous year, predominantly affecting chickens and turkeys.

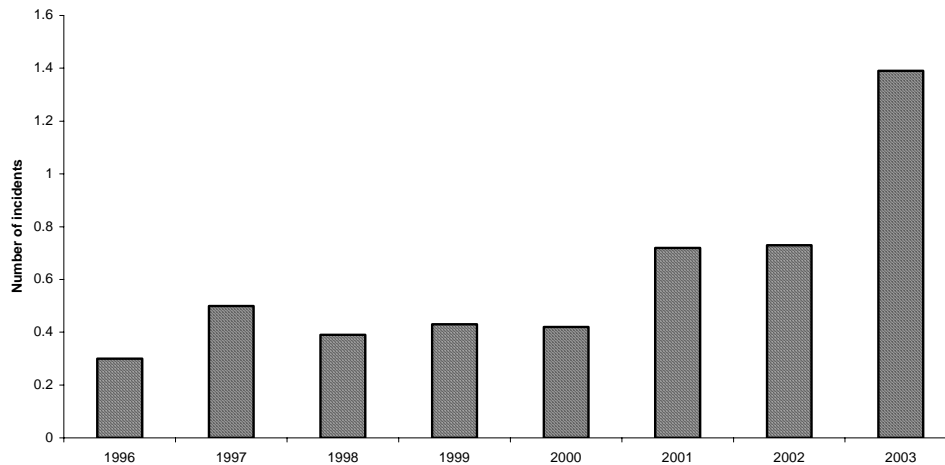
The commonest diagnoses of salmonellosis were due to serotypes other than *Salmonella* Typhimurium, *Salmonella* Enteritidis and *Salmonella* Pullorum. Such salmonellae have been identified from all domestic poultry sectors. *Salmonella* Typhimurium incidents continued to be recorded from commercial poultry and gamebirds. The low prevalence trend of salmonellosis due to *Salmonella* Enteritidis recorded since 1999 was continued this year, coincident with increased uptake of layer flock vaccination over recent years. *Salmonella* Pullorum incidents are diagnosed sporadically, predominantly in gamebirds. Other *Salmonella* serotypes typically associated with gamebirds are *Salmonella* Binza/S.Orion +15 variant, which have shown a reduction in prevalence over recent years.

Mycoplasmosis was diagnosed frequently. Disease due to *Mycoplasma gallisepticum* (Mg) was recorded in both commercial poultry and gamebirds, with putative links made on occasions of suspected disease spread from free-living to commercial and backyard flocks. Mg diagnoses continued the rise in prevalence seen in 2002, in which the number recorded was higher than in the previous seven years. It is also noted that the use of molecular diagnostic techniques may have enhanced sensitivity of the detection of mycoplasma infections.

*Mycoplasma meleagridis* was diagnosed in turkeys once in 2003, the first recorded incident since 1996.

Blackhead (histomoniasis) diagnoses have shown a marked rise in 2003, with the number of diagnoses higher than over the previous seven years (see Figure 23). A seasonal pattern of blackhead diagnosis in the autumn has related to disease incidents affecting smaller turkey flocks producing for the Christmas market (see Table 10; Group 2). The lack of licensed medication for the control and treatment of blackhead (following the withdrawal of dimetridazole and nifursol) has been a particular concern for the industry. Diagnoses of blackhead have also occurred throughout the year in free-range layer flocks and sporadically in broiler breeders.

**Fig 23: All incidents of blackhead as a percentage of diagnostic bird submissions in Great Britain 1996 - 2003**



Other familiar turkey diseases were diagnosed throughout the year including a typical seasonal prevalence of erysipelas in the autumn.

Gamebird diagnoses of rotavirus, hexamitiasis and trichomoniasis in chicks and young poults have followed a similar pattern compared with

previous years. The customary seasonal prevalence of these diseases recorded in late spring and during the summer months relates almost exclusively to gamebird diagnoses during the rear period. Climatic and environmental conditions were particularly favourable during the 2003 gamebird rearing season. This, in combination with widespread reviews of husbandry and management practices following the withdrawal of dimetridazole (Emtryl) is generally considered to have contributed to an overall reduced incidence of motile protozoal enteropathy across this sector. The seasonal pattern of coccidiosis diagnoses also comprises disease in game poults. Nephrosis due to Coronavirus continues to be encountered in adult gamebird breeding stock.

The numbers of diagnoses of chlamydiosis has remained relatively low in 2003, continuing the trend of the previous four years, reflecting lower submission numbers of psittacines and pigeons. An increase in the number of diagnoses of Paramyxovirus of pigeons compared with the previous two years was recorded.

## **MISCELLANEOUS**

Miscellaneous species include camelids, deer, buffalo, bison, horses, dogs, cats, animals from zoological collections and wildlife. Total diagnostic submissions for miscellaneous species rose by 1.1% to 13,467.

The most frequently recorded species were dogs (49.6% of total diagnostic submissions within the miscellaneous class), cats (30%) and horses, mules and donkeys (6%). VLA has largely withdrawn from diagnostic work in companion animal species apart from when zoonoses are suspected and some contract work. The diagnostic work on companion animals recorded is virtually all carried out by Scottish Agricultural Colleges.

Diagnostic submissions from deer remained static (72 in 2003 compared with 71 in 2002) and comprised less than one per cent of diagnostic submissions from miscellaneous species.

## **TABULATED DATA**

As well as the information published in the annual VIDA book, there is a customised data retrieval service from the extensive VIDA database. Information can be retrieved for any number of years from 1975 to the current year, for cattle, sheep, pigs, birds, goats, horses, rabbits, fish, dogs and cats, and since 1990 for deer and badgers. Birds can be classified into a large number of different categories. Other variables include age, diagnosis from a specific sample type, and county of origin.

Further details of customised ad hoc retrievals, including a cost quotation are available from:

VIDA Section  
Centre for Epidemiology and Risk Analysis  
Veterinary Laboratories Agency  
New Haw  
Addlestone  
Surrey  
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