

## **VIDA 2002**

### **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 2002. The total number of submissions received in 2002 was 123,128. 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 2002 the Epidemiology Department of the VLA Weybridge (previously called CVL) received 94 such requests for information, involving 702 individual data retrievals.

#### **Disease and species code changes in VIDA in 2002**

There were no new disease or species code changes made in 2002

#### **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 2002: 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 2002 livestock data is taken from the June Agricultural Census figures (MAFF statistics 2001) 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 2002.

### **Livestock population**

#### **Cattle**

The total cattle population, including calves, in Great Britain fell by 2.9% in 2002 to just under 8.7 million animals.

#### **Dairy Cattle**

The total dairy herd fell by 2.3% in 2002 to just over 2 million

#### **Beef Cattle**

There was a decrease of 3.1% in the total beef breeding herd in 2002 which now stands at just over 1.4 million

## **Sheep**

The total sheep population including lambs decreased by 2.0%, to 33.5 million. There was also a decrease in the total adult sheep flock which fell by 1.1% to approximately 17.5 million.

## **Goats**

The total goat population increased by 25% in 2002 to approximately 90,000 animals.

## **Pigs**

There was a decrease of 4.9% in the total pig breeding herd in 2002 which now stands at approximately 600,000 animals. The total number of 'other pigs' decreased by 4.7% to stand at approximately 4.5 million.

## **Poultry**

The total number of breeding fowls fell by 11.9% in 2002 to approximately 8.8 million. There was also an decrease in the number of fowls for producing eggs, which fell by 3.7% to just under 28 million and in the number of broilers and other table fowls which decreased by 9.5% to approximately 9.8 million.

## **Meteorological data**

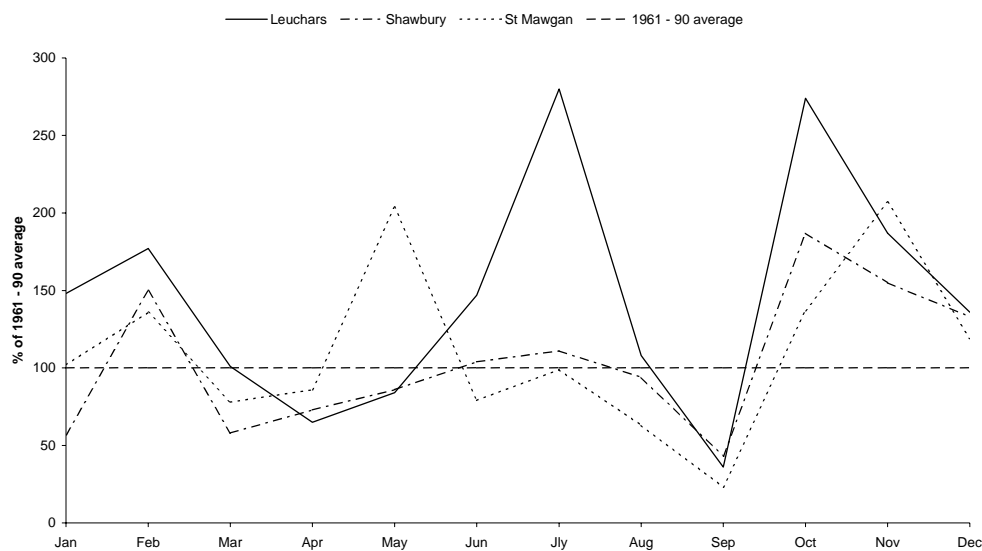
For the location of the weather stations referred to in Figures 1 and 2 please see the map inside the back cover.

Although the first few days of January were very cold, the majority of the month was mild and wet with widespread fog. Towards the end of the January there was snow in the north and this was followed by severe gales in southern Scotland and north-east England. This disturbed weather continued into February which was abnormally mild and wet especially during the first half of the month. There was coastal flooding in the south-west followed by

river flooding particularly in Cumbria, Wales and south-west England. During the second half of February it became colder with widespread night frosts, the first frosts in southern parts for more than a month. Overall it was the wettest February since 1990 and although rainfall was below average in eastern England it was in excess of four times the normal at many places in south-west Scotland, north-west England and North Wales.

March was changeable with plenty of sunshine in northern and western areas but also frequent and sometimes heavy rain. Apart from few days towards the end of the month when it was cold and frosty, most of March was warm; there have only been 14 warmer during the last 100 years.

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



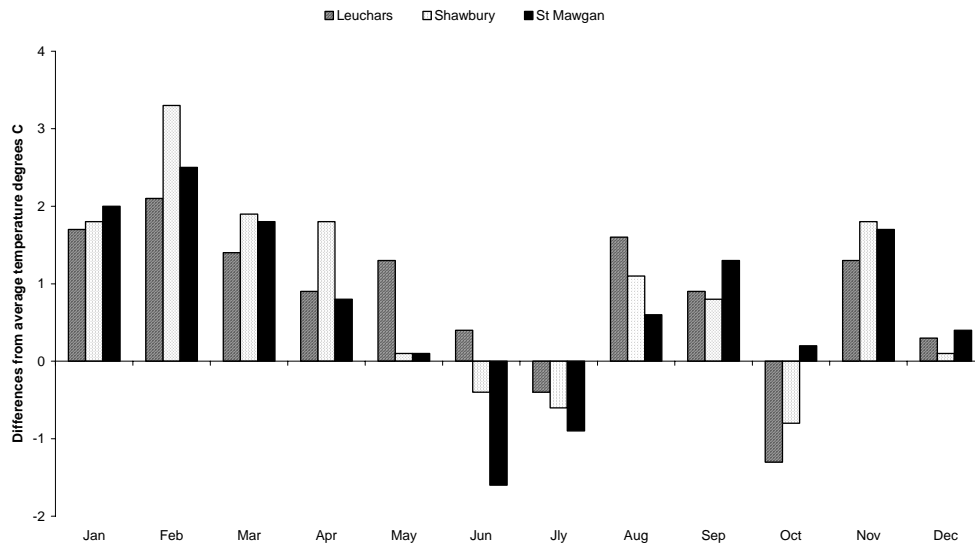
Almost all of April was drier and warmer than average with no rain from mid-March until mid-April throughout much of eastern England. During the last five days of the month it turned very unsettled and much cooler with widespread rain in all regions.

May 2002 was the sixth consecutive warmer-than-average May and rainfall exceeded twice the normal amount in parts of southern England, Cumbria and

south-west Scotland. There were widespread thunderstorms throughout the month and a minor tornado in Sussex during the last week. June too was very wet, but only in the west. There were many showers and scattered thunderstorms, particularly in the north and west but the south and east remained largely dry.

July was another wet month, the wettest July since 1988, with two to three times the average rainfall over many parts of the country. Sunshine levels were low everywhere and for some areas in Scotland it was the dulllest July since 1931. Despite the lack of sunshine it was still warm in most places and there was a particularly hot few days in eastern and central England during the last week of the month.

Fig 2: Differences in temperature from the 1961 - 90 average at three places in Britain in 2002



The dull conditions continued into August which was the dulllest since 1987. Overall it was warm and very thundery with frequent thunderstorms and localised flooding affecting many areas at the start of the month. September by contrast was very dry and sunny, particularly in the south and west. However in Scotland and parts of north-east England there was less sunshine than usual. Towards the end of the month it became much cooler at night and fell below freezing in some areas of Scotland. In England and Wales it was the driest September since 1997 and in Scotland since 1996.

October started very warm but then became cold and unsettled. It was a wet month everywhere, but particularly in eastern Scotland. From about the 10<sup>th</sup> onwards there was widespread, prolonged rain with flooding in some parts of northern England and the southern regions of Scotland. The end of the month was sunnier, but there were still frequent showers and thunderstorms with severe gales in some areas of Wales, the Midlands and East Anglia.

November was very mild and very wet. Averaged nationally sunshine levels were 9% below average making it the dullest November since 1994. During the middle of the month there were episodes of prolonged, heavy rain with gales in many areas. The rain continued towards the end of the month and there was widespread fog in central and eastern England.

December was a month of contrasts with very wet weather in the south and very dry in the north. It was the dullest December since 1989 and parts of eastern Scotland and eastern England had less than 40% of their normal sunshine. Throughout the month it became progressively colder with night frosts and freezing fog, especially in Scotland. However, although day temperatures were below average, night temperatures were higher than usual and taken overall there have only been twenty warmer Decembers during the last 100 years.

## **DISEASE TRENDS IN 2002**

### **CATTLE**

#### **General**

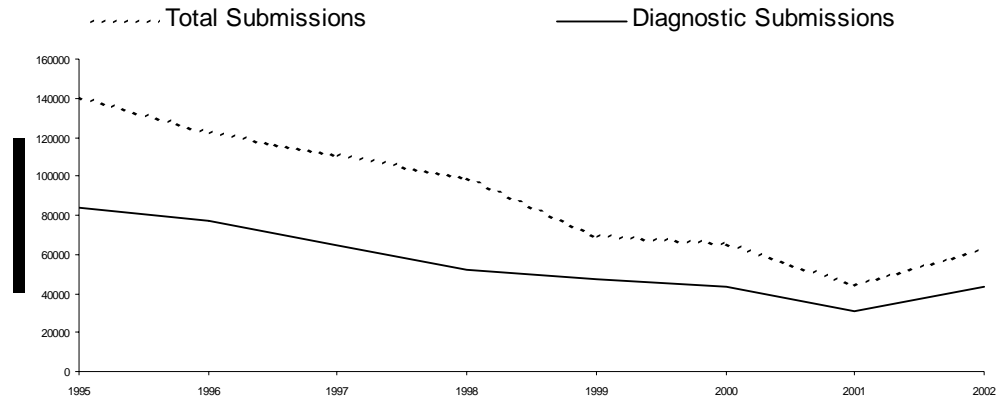
The year 2002 was spent recovering from FMD with stringent Movement Restrictions operative and markets closed for the first part of the year.

The problems were compounded by an above average rainfall in spring and early winter, particularly affecting the main cattle areas along the western side of the country. This resulted in later turnouts, conserved forages of variable quality and earlier housing.

Temperatures were also above average for most of the year. Consequently when dairy cows were turned out there was an abundance of grass and the spring surge in milk production resulted in a fall of up to a third in the milk price.

Although total cattle submissions did not fully make up the 37% reduction experienced in 2001, diagnostic submissions returned to immediate pre-FMD levels, being 99.9% of the total received in 2000.

Fig 4: Total cattle submissions in GB 1995 - 2002



## Respiratory Disease

Wet warm weather conditions precipitated severe outbreaks of calf pneumonia during the housed periods. Excluding the figures for 2001, the number of diagnoses recorded for *Pasteurella multocida* was the highest for the previous seven years. The reverse was true for RSV, which had the lowest number of diagnoses recorded over the same period. Both these diagnoses are in contrast to *Haemophilus somnus*, which remained remarkably constant over this period.

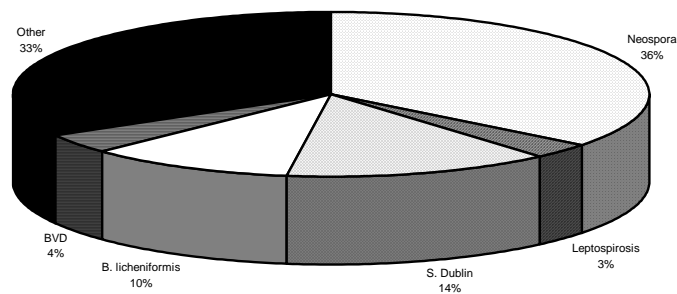
There was little change in either the incidence or seasonal pattern for IBR and husk. Seventy per cent of the IBR cases occurred during the winter months and 79% of husk cases from July to October.

Though impossible to quantify, it was suspected last year that the prevalence of Malignant Catarrhal Fever had increased. This suspicion appeared to be confirmed with the highest number of MCF cases recorded in 2002 over the last eight years.

## Reproductive Disease

The number of official BS7 *Brucella* abortion admissions were similar to the total numbers examined in 1999 and 2000. A single *Brucella abortus* abortion, the first for many years, was recorded following the importation of dairy heifers from Eire on to a Scottish Farm. (The bulk of this incident, which subsequently also involved an importation of cattle from Northern Ireland, occurred in 2003, when appropriate steps were taken to ensure Great Britain retained its EU “Official Brucellosis-Free Status”).

Fig 5: Diagnosis of bovine fetopathy in 2002 (excluding “fetopathy diagnosis not reached”) as a percentage of all bovine fetopathy diagnoses (n=1078)



The pattern for other causes of abortion has shown little change over the last four years with most remaining relatively constant, except Leptospirosis which has progressively reduced from 24% to 3% of total abortion diagnoses.

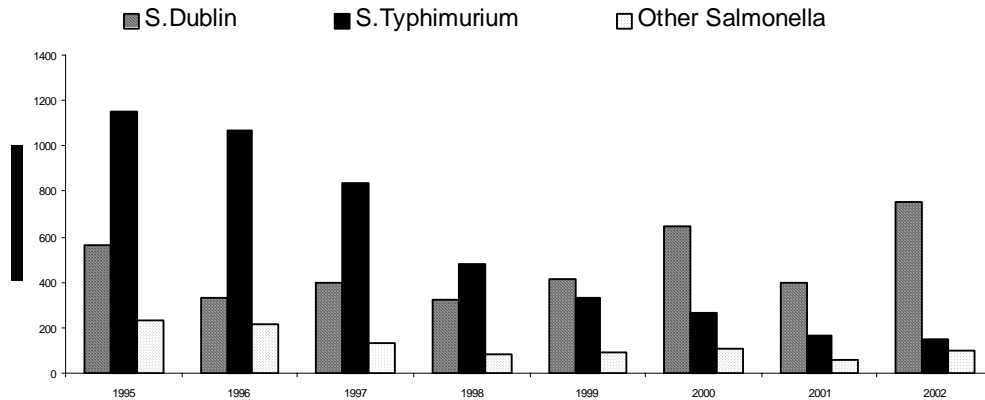
Despite there being no change in the incidence of non-fetopathic IBR, fetopathy due to IBR has fallen by 85% over the last eight years.

The reduction in both Leptospirosis and IBR fetopathy may in part be due to the introduction of more stringent diagnostic criteria.

## Alimentary System

### *Salmonella*

Fig 6: All incidents of salmonellosis other than fetopathy in cattle 1995 - 2002



The above bar chart (Fig. 6 ) reveals that the total number of non-fetopathic *Salmonella* diagnoses have almost halved since 1995 when the total number of diagnoses was 1,944 as compared to 1,004 in 2002. There has also been a reversal in the incidence of *Salmonella* Typhimurium and *Salmonella* Dublin.

The reduction in *S. Typhimurium* is considered to be largely the result of a spontaneous reduction of DT104 in the national herd. It is uncertain as to whether this was due to a gradual degradation of virulence, or a high level of herd immunity following widespread exposure of breeding cattle in recent years.

### *Calf scour*

Table 2: Expression of Rotavirus, Coronavirus and Cryptosporidia neonatal calf scour diagnoses as a percentage of their totals

Diagnosis	1995	2002

Rotavirus	48%	50%
Cryptosporidia	35%	42%
Coronavirus	17%	8%

The above table illustrates there has been no overall change in their order with Rotavirus and Cryptosporidia the main causes and Coronavirus now only associated with 8% of calf scours. If EPEC/VTEC Colibacillosis was included in the above calculation it would be found to be associated with 3% of scours in 1995 and 1.5% in 2002.

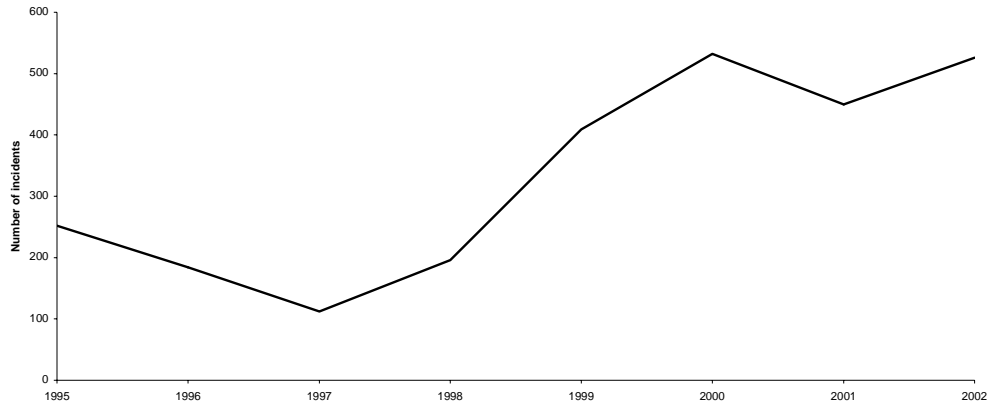
The incidence of coccidiosis in older calves has remained relatively unchanged in recent years.

### **Parasitic**

There has been little change in the overall incidence of Parasitic Gastroenteritis but a marked reduction in Ostertagiasis in the last six years, which in part must reflect a succession of mild winters and a reduction in type II Ostertagiasis.

The number of Fasciolosis diagnoses were the same as at the peak seen in 2000. Fasciolosis is now a well established nationwide disease.

Fig 7: All incidents of fasciolosis in cattle in 1995 - 2002



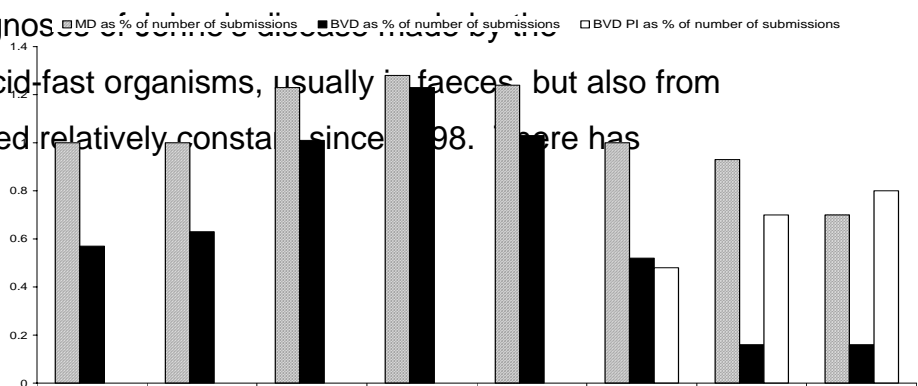
### BVD

The figures for BVD, at below 0.2%<sup>m</sup>, show that the confirmation of acute infection is uncommon. One of the consequences of acute infection of the cow in early pregnancy is the birth of persistently viraemic calves. These may progress to be identified as cases of mucosal disease or BVDV-PI in association with clinical ill-thrift, poor growth, recurrent pneumonia or scour. Occasionally, these animals are clinically normal and can live to four or more years of age. In addition, some “BVDV PI” animals will be the progeny of BVDV PI dams. Overall these two categories/manifestations of BVDV infection are recorded five times more often than acute BVD infection. Interestingly the number of diagnoses of mucosal disease has declined by 60% over the last eight years and this year is almost on a par with cases of “BVDV PI”. Overall, these figures that represent earlier intrauterine infection have been dropping which may be a consequence of more widespread usage of vaccine.

### Johne's disease

All incidents of BVD and MD in cattle in Great Britain as a percentage of submissions less “diagnosis not applicable” & “screening” 1995 - 2002

The number of diagnoses of BVD and MD in cattle in Great Britain as a percentage of submissions less “diagnosis not applicable” & “screening” 1995 - 2002. The number of diagnoses of BVD and MD in cattle in Great Britain as a percentage of submissions less “diagnosis not applicable” & “screening” 1995 - 2002. The number of diagnoses of BVD and MD in cattle in Great Britain as a percentage of submissions less “diagnosis not applicable” & “screening” 1995 - 2002.

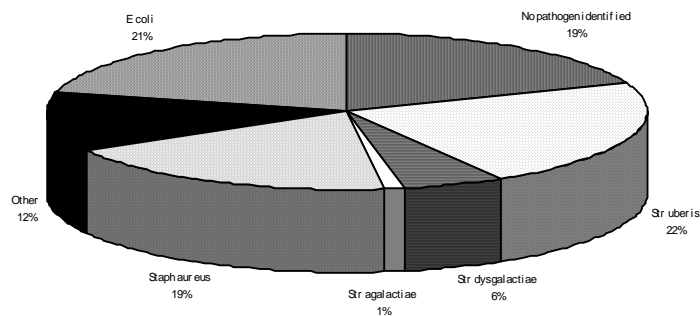


however, been a marked increase in the number of serological positive results using the ELISA test – in 2002 there were 145% more diagnoses by positive serology recorded than by the demonstration of acid-fast organisms. Over the year it has become apparent that probably due to inadequate biosecurity Johne's disease infection has been further disseminated in the national herd when restocking.

## Mastitis

The relative proportions of major mastitis pathogens diagnosed in all mastitis submissions during 2002 are shown in Fig. 8.

Fig 8: All incidents of mastitis in cattle in Great Britain as a percentage of total mastitis diagnoses in 2002 (n=6517)

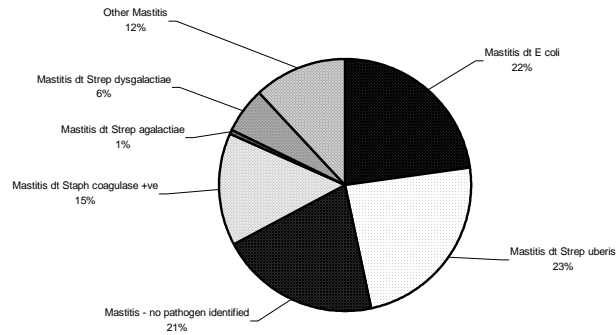


The relative proportions of major mastitis pathogens diagnosed in clinical and subclinical cases respectively by the VLA during 2002 are shown in Figures 9 and 10.

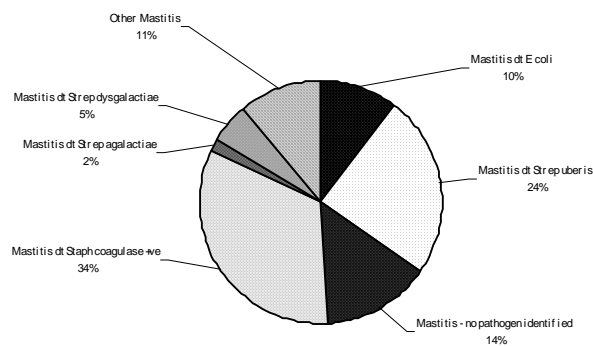
*Staphylococcus aureus* accounted for 34% of the subclinical mastitis diagnoses recorded by the VLA (Fig. 10). This apparent high prevalence of subclinical *Staphylococcus aureus* mastitis possibly combined with increasing recognition of the need to carry out bacteriological examination of high cell count cows in herds with a high

bulk tank somatic cell count will have contributed to the increased proportion of *Staphylococcus aureus* mastitis diagnosed in all mastitis submissions this year (19% compared to 15% in 1999 and 2000). The apparent increase in *Staphylococcus aureus* mastitis, for which well-established control measures exist, is interesting in light of the observation that the labour resource on some dairy farms may have dropped below a critical threshold, as a consequence of milk price, possibly resulting in less attention to detail in cow management.

**Fig 9: Clinical mastitis in cattle by pathogen in 2002 (Jan-Dec) (n = 4390)  
(VLA diagnoses only)**



**Fig 10: Sub-clinical mastitis in cattle by pathogen in 2002 (Jan-Dec) (n = 896)  
(VLA diagnoses only)**



### **Miscellaneous Conditions**

The number of thyroid hyperplasia diagnoses was more than double that recorded in any of the previous four years, and often considered due to inadequate supplementation of dry cow rations.

*Clostridium chauvoei* diagnoses in 2002 were 136% of the previous eight year average. The fibrinous pericarditis form is now encountered on nearly as many occasions as the classical "Black Leg" form.

## **SHEEP**

### **General**

The weather during 2002 was generally mild with above average temperatures for several months of the year, particularly January to April and November. Rainfall was close to or above average for much of the year, although September was a noticeably dry month. The mild and wet conditions were again considered to be significant factors in the increased incidence of fasciolosis and continuing problems of parasitic gastroenteritis.

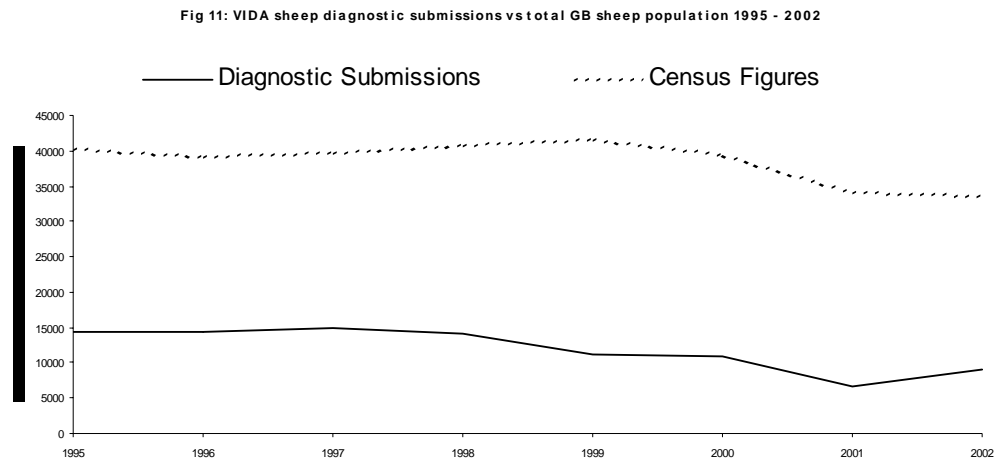
The sheep industry found some encouragement in the improved trading conditions during the year with lamb prices throughout 2002 the highest for five years. This improved trading is likely to be due to the significant reduction in the UK breeding flock in 2001 which was followed by a modest increase of only 3-4% during the year 2002. The export trade, which recovered to nearly 60% of pre-FMD levels, was nonetheless diminished by the strong home demand.

There was also an improvement in skin prices reaching £5 to £7 after several depressed years. This in part contributed to the increased value of cull ewes. The demand for cull ewes, with heavy ewes making as much as £50-60 per head in April, exceeded expectation with 1.8 million culls recorded, approximately 5% above expectations. The slight increase in the breeding flock and the demand for cull ewes was consistent with a greater retention of the ewe lamb crop for breeding purposes.

### **Submissions**

Diagnostic submissions showed some recovery following the Foot and Mouth Disease outbreak in 2001 with an increase of 40% on the previous year. However, submissions were still 17% lower than in 2000.

This is disappointing but must be set against both a reduction in the national flock size post FMD and the intense financial pressure to reduce variable costs on many livestock farms.



## Reproductive disease

There was a 23% increase in the number of ovine fetal submissions in 2002 (2283) compared with 1858 submissions in 2001, showing some recovery after FMD. However, the number of submissions in 2002 was 35% lower than in 2000 (3093). A diagnosis was reached in 50% of submissions in 2002. This is similar to 2001, but lower than 1996 to 2000 with a mean diagnostic rate of 57%.

Enzootic abortion due to *Chlamydophila abortus* remains the most common diagnosis. 44% of incidents in which a diagnosis was reached were due to this organism, which was similar to the previous two years. Toxoplasmosis (24.8%) and Campylobacteriosis (11.3%) also continue as the second and third most common diagnoses.

Twenty-nine incidents of abortion were associated with *Salmonella* Dublin infection. This represents a considerable increase on previous years. The number of annual incidents recorded between 1992 and

2000 varied between 7 and 14 and as a percentage of submissions in which a diagnosis was reached between 0.28% and 0.48%. In 2001 this increased to 1.37% and in 2002 a further increase to 2.52%. The increasing prevalence may reflect an increase in prevalence of *S. Dublin* infection in cattle. In some of the outbreaks, sheep aborting due to *S. Dublin* showed systemic illness with variable mortality. In other incidents, abortions occurred but ewes showed no other clinical signs. It has not been established that *S. Dublin* exhibits strains of varying virulence, so host factors may be involved in determining whether infected ewes abort and whether they show systemic illness.

### **Respiratory disease**

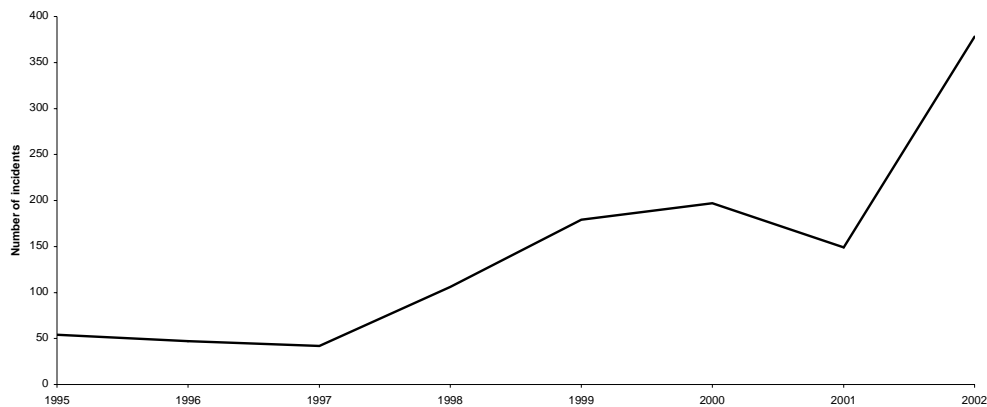
Six incidents of maedi were reported during 2002. Although few in number it is the highest number of incidents recorded since 1992 and a reminder that farmers should consider this infection when purchasing stock. The number of cases recorded on VIDA is likely to be an underestimate as various factors conspire to cause under-reporting of MV cases. Clinical disease is not usually evident until infection has been in a flock for several years and within-flock seroprevalence has reached 50 - 60%. Also, since affected sheep are almost invariably older animals in commercial flocks, they are likely to be culled without receiving veterinary attention and detailed investigation not initiated until the problem becomes serious. Furthermore, the clinical and post-mortem features may be masked by concurrent conditions such as pulmonary carcinomatosis (Jaagsiekte). A serological test is available to screen for the presence of MV but no test is available to screen for pulmonary carcinomatosis. Flocks owners can therefore purchase stock with confidence of freedom from the former condition, but a guarantee of freedom from the latter condition is less certain. There were 44 incidents of pulmonary carcinomatosis recorded this year, a figure similar to the mean from 1992 to 2000. However, given that

submissions have declined this suggests that the true incidence may be increasing.

### **Alimentary disease**

The number of incidents of fasciolosis has been rising since 1997 (42 incidents) with a slight fall in 2001. In 2002 fluke caused significant disease problems with 378 incidents recorded, the highest figure for at least 25 years.

Fig 12: All incidents of fasciolosis in sheep in 1995 - 2002

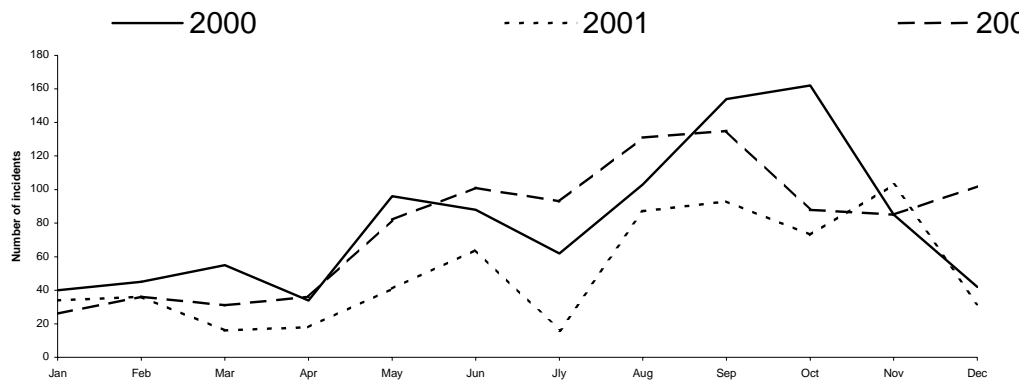


The mild wet weather conditions seen over recent years are likely to have contributed to this. As well as an increase in disease incidence in the traditional wetter western areas of the UK, disease has also been seen in areas in the east less traditionally associated with disease. In East Anglia acute as well as chronic fluke was recorded. Fasciolosis predisposes to black disease and there were 27 diagnoses compared with a mean of 15 between 1995 and 2000. There were also several reports of suspected inefficiency to the flukicide triclabendazole.

The weather has also favoured parasitic-gastroenteritis, continuing the trend seen in recent years. Although disease is most commonly recorded in lambs in August and September, incidents are now

commonly reported in the winter months and in adult animals. The number of incidents recorded in December this year was particularly notable and likely to be associated with lambs grazing heavily contaminated pastures following the mild autumn/early winter (Fig 13). Disease seen in adult animals may be secondary to other factors such as poor nutrition, poor dentition and high stocking densities. Resistance to benzimidazole and levamisole wormers was also confirmed by in vitro methods.

Fig 13: All incidents of PGE - including haemonchosis, nematodiriasis and not otherwise specified in sheep 2000 - 2002



Clostridial diseases, particularly pulpy kidney, continue to be among the most common conditions recorded on VIDA. The number of diagnoses of lamb dysentery (60) this year was higher than the mean (50) for the years 1992–2000. This is disappointing, and may reflect an attempt by farmers to cut costs by reducing vaccine usage during the period of financial difficulty experienced by the industry.

### Miscellaneous

The number of incidents of Louping ill was as high as 1996 when 32 incidents were recorded. The disease is sporadically diagnosed in areas where farmers are generally aware of the infection. Cases are usually seen in the spring and autumn in hogs that did not acquire

infection and become immune as lambs. Several of the outbreaks this year were thought to have arisen as a consequence of the disruption caused by FMD in 2001. On some farms normal management and grazing patterns were disrupted due to movement restrictions and on others animals were purchased to replace slaughtered stock. This resulted in the introduction of susceptible sheep to infected areas.

The relation between farming and the environment is further illustrated by nine reports of chronic lead toxicity in lambs associated with geochemical exposure. Clinical signs reported included stiffness, vague malaise and in some cases convulsions prior to death. A nephropathy, typical of lead poisoning was also reported. Ingestion of soil from eroded banks or hedgerows, molehills or silt from streams are likely sources of exposure. Where appropriate voluntary restrictions were agreed to protect the food chain.

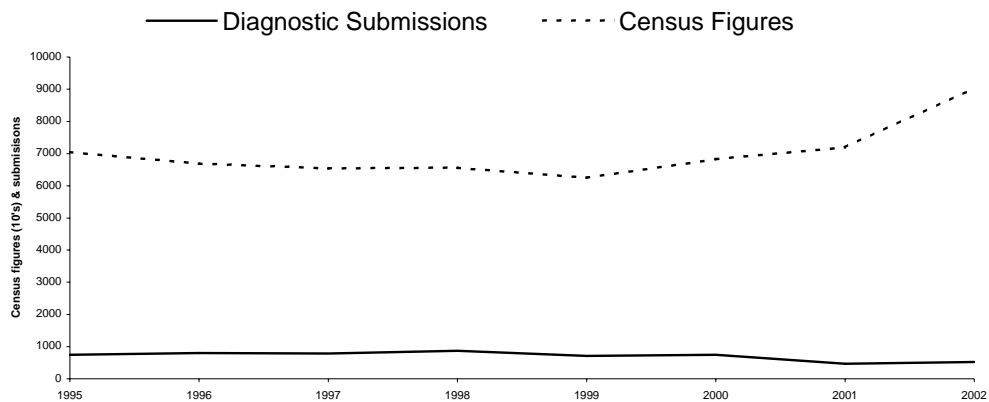
The welcome trend in the fall in the number of incidents of systemic disease associated with *Salmonella* Typhimurium since a peak in 1995 continued. Conversely the number of incidents (13) of systemic disease associated with *S. Dublin* was the highest for several years and overtook *S. Typhimurium* as the most common serotype (see also fetopathies).

The number of incidents of sheep scab and ectoparasitic diseases not otherwise specified (mostly lice) recorded were both the lowest since 1999. This is likely to be an underestimate of the true prevalence of, particularly, sheep scab as anecdotal evidence suggests that the parasite is widespread. The reduction in number of incidents may in part be due to an overall decrease in diagnostic submissions and also in some cases farmers may only seek a diagnosis when there is a perceived lack of efficacy of treatment.

## GOATS

Unlike the majority of species farmed in the UK, there are several quite different management systems operated by goat owners in the UK. Out of an estimated population of 100,000 goats for example, figures from the Dairy Hygiene Inspectorate for April 2003, confirmed that there are 141 registered milk production holdings in England and Wales with a total of 29,335 milking goats. Herd size varies from 1 to 2,500.

Fig 14: Goat diagnostic submissions vs total goat population in Great Britain 1995 - 2002



Conversely, many goats are unregistered and kept as pets, eg pygmy goats.

This does have an important influence on the incidence of endemic disease which unfortunately cannot be highlighted in the VIDA data available – which covers all goat submissions in Great Britain.

Fig 15: All incidents in goats in Great Britain as a percentage of total diagnostic submissions

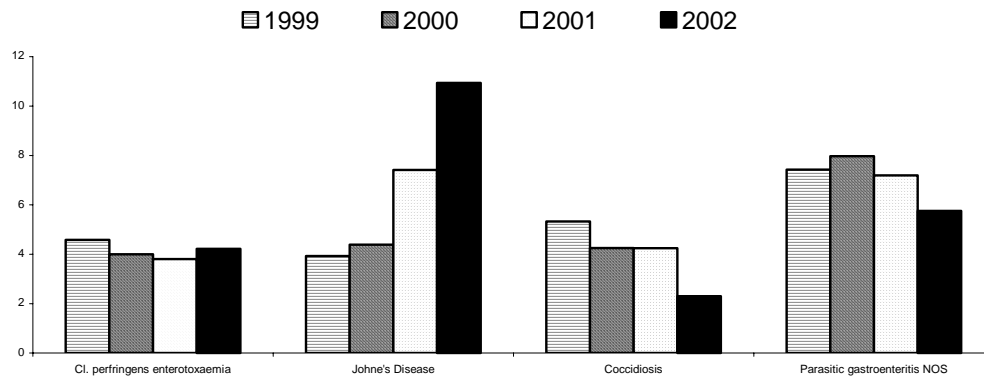


Figure 15 shows the continuing increase in the incidence of Johne's disease in goats for the third successive year. This is confirmed by a similar trend in Johne's vaccine uptake in the goat sector (information supplied by VLA Weybridge). The fact that many larger herds are housed all year (to control intestinal nematode parasites) gives a greater opportunity for within-herd spread of infection, and large numbers of animals can be housed together on one unit. The rapid expansion of some herds and the absence of good screening tests give units little chance of screening incoming stock for disease.

Parasitic gastroenteritis tends not to be a problem in the larger herds (for reasons outlined above), and diagnoses remains sporadic throughout the year, mirroring those of other years and occurring mainly in smaller units where goats are grazed.

Caseous lymphadenitis (CLA) showed a marked rise during 2002 and yet again the management system adopted by larger units gives an ideal environment in which infection can spread between goats. Although generally considered to be sporadic and relatively mild and superficial in the goats in the UK, there was evidence from at least two herds of more widespread infection including visceral lesions.

The number of diagnoses of mastitis in goats remains very low. Large numbers of goats can be milked through a parlour with minimal attention to normal “cow” milking procedures, suggesting that goats have an innate resistance to mastitis infection.

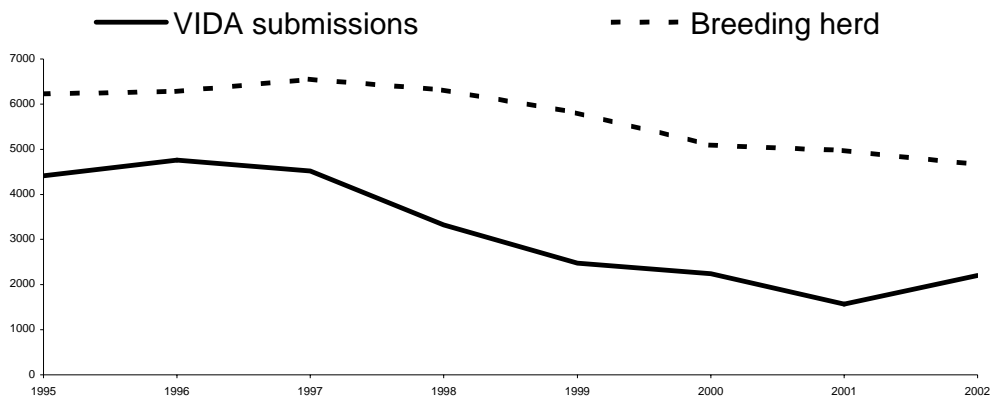
The three categories in the “diagnosis not reached” category were those in which the clinical presentation was described as either systemic, digestive or skin disease.

## PIGS

### General

The national breeding herd for England and Wales has fallen 6.3% from last year and 8.5% since 2000, the year before the outbreak of foot and mouth disease (FMD). However, submission numbers (less diagnosis not applicable) have only fallen 1.8% between 2000 – 2002, and increased 40.2% from 2001 - 2002. In many areas endemic postweaning multisystemic wasting syndrome (PMWS) was the ultimate reason for producers going out of pig production.

Fig 16: VIDA diagnostic pig submissions vs pig breeding herd 1995 - 2002



### Reproductive Disease

The fetopathy diagnostic rate of 45% exceeded the pre-FMD (2000) level of 37%. Last year's poor diagnostic rate of 22% probably reflects the reduction in sample quality eg postal samples rather than foetuses because of concerns over biosecurity.

The problem of increased autumn infertility raised by the Pig Veterinary Society was addressed by VLA in England and Wales by a questionnaire survey of practitioners. However this problem was not reflected in total VIDA submissions (2000 - 100 submissions; 2001 – 77 submissions; 2002 – 95 submissions). Although as a percentage of the

breeding herd numbers there was a marginal increase. Also the survey produced no clear confirmation or possible cause of this problem. This highlights the need for improved diagnostic techniques for the investigation of pig subfertility.

### **Respiratory Disease**

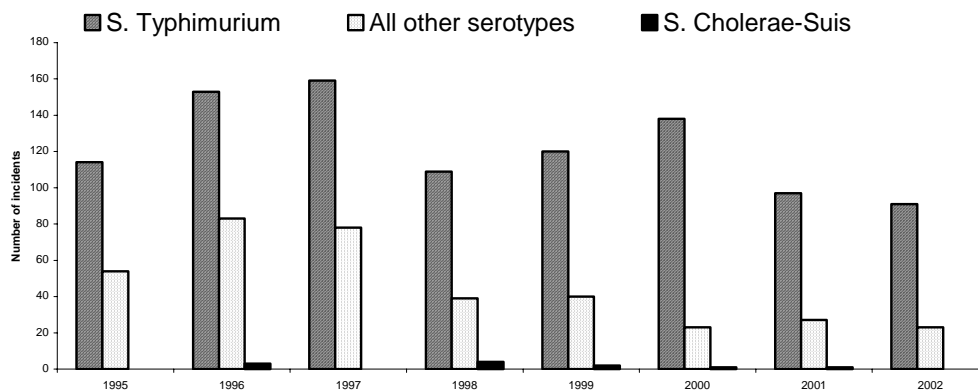
Respiratory disease was identified as the main clinical sign in 15.9% of diagnostic submissions (2000 – 10%; 2001 – 19.8%). As usual the most common diagnoses were 'pneumonia not otherwise specified' at 31.1 of respiratory disease submissions and '*Pasteurella multocida* pneumonia' at 26%. These figures may be a reflection of underlying PMWS in many herds.

Nine incidents of swine influenza were recorded this year (2001 – 6; 2000 – 20 with a peak of 177 in 1992). Avian-like H1N1 (195852) and swine H1N2 were isolated from clinical cases. Although there is serological evidence of H3N2 this serotype/strain was not isolated, possibly suggesting viral attenuation.

### **Alimentary Disease**

Diarrhoea was reported as the main clinical sign in 14.5% of diagnostic submissions. The steady decline in cases of enteric colibacillosis (1999 – 44.7%; 2000 – 35.6%; 2001 – 33.9%; 2002 – 31.3%) was maintained and is probably a reflection of more efficient and targeted vaccination programmes. The decline in swine dysentery diagnosis rate also continued; from 20.5% in 1998 to 13.4% this year. Probably concurrent PMWS and swine dysentery would render most units non-viable.

Fig 17: All incidents of *Salmonella* Typhimurium and *Salmonella* Cholerae-Suis in pigs  
1995 -2002



Surprisingly, the *Salmonella* Typhimurium incidents have decreased as a percentage of enteric submissions (2000 – 6.2%; 2001 – 5.9%; 2002 – 4.1%). There is anecdotal contradictory evidence with some units reporting an increase in salmonellosis predisposed by PMWS. It is predicted that 2003 may see an increase due to increased surveillance with the implementation of the ZAP (Zoonosis Action Plan) Scheme.

### Other conditions

PMWS, and to a lesser extent epidemic porcine dermatitis and nephropathy syndrome (PDNS) were far and away the most important diseases confronting pig farmers this year. As indicated previously, they are the main reason for the decline in pig numbers. PMWS and PDNS made up 15.2% of all diagnoses, and experience would indicate that PMWS predisposed many other diseases recorded in VIDA figures.

## **BIRDS**

The number of submissions of poultry and gamebirds continued to decline, probably a result of the increasing numbers of these species being examined by private veterinary laboratories and veterinary practices, which do not contribute data to VIDA. This particularly applies to poultry, turkeys and ducks in larger commercial enterprises; nevertheless the VIDA figures continue to give a snapshot of disease present in smaller enterprises (including free range poultry) and in gamebirds.

In terms of domestic fowl, the major viral diseases of infectious bronchitis and Marek's disease continue to be diagnosed regularly. Vaccination against both of these diseases is widespread in commercial poultry, but Marek's disease, in particular, is continuing to be regularly encountered in hobby and backyard flocks where the birds have not been vaccinated. Diagnoses of Infectious bursal disease have shown a welcome decline in recent years but the disease continues to be recorded. Infectious laryngo-tracheitis (ILT) continues to be recorded sporadically, principally in unvaccinated small flocks.

*Mycoplasma gallisepticum* gives rise to significant disease problems in both poultry and gamebirds and the number of diagnoses was higher in 2002 than in the previous 7 years. This may in part reflect the availability of PCR testing giving improved diagnostic rates but also a genuine increase in the disease particularly in organic flocks, and the disease continues to be prevalent in gamebirds. There were no recorded diagnoses of *Mycoplasma meleagridis* in turkeys. Other mycoplasmas are often isolated from cases of respiratory disease in poultry and gamebirds although their significance may be hard to determine.

*Salmonella* Typhimurium continues to be recorded in commercial poultry and gamebirds but salmonellosis due to *S. Enteritidis* has shown a marked decline in recent years, which coincides with the increased use of vaccination in layer flocks. *S. Pullorum* is occasionally encountered particularly in gamebirds. Salmonellosis due to other serotypes continues to be prevalent, including *S. Binza* which is associated particularly with gamebirds.

Many of the diagnoses of 'helminthiasis not specified' refer to gamebirds (as do the majority of *Syngamus trachea* diagnoses), but helminthiasis is also prevalent in free range poultry flocks. On account of its intermediate host of *Heterakis* worms, blackhead is increasingly being recognised in free range poultry rather than being confined to turkeys which are particularly susceptible to the disease. Hexamitiasis remains a common diagnosis in gamebirds and occasionally in turkey poults. Ectoparasitic diseases were regularly encountered; this refers principally to diagnoses of red mite in chickens.

Amongst other diseases of turkeys, a few cases of haemorrhagic enteritis were recorded with the expected autumn prevalence in small turkey flocks. Erysipelas also showed its customary seasonal prevalence in the autumn.

In gamebirds, rotavirus continues to be prevalent in chicks and young poults. In adult gamebirds Nephrosis due to Coronavirus continues to be encountered in breeding stock. However, it is noteworthy that there have been no recorded diagnoses of marble spleen disease in the last three years.

Last year garden bird mortality was introduced as a new diagnosis code. This is a bacterial enteritis and septicaemia associated with

*E.coli* O86 or *Salmonella* Typhimurium. There was a marked increase in the number of diagnoses made this year with a seasonal peak between November and April but at least one case was recorded in each month of the year except June and October.

The numbers of diagnoses of chlamydiosis remained relatively low compared with previous years, reflecting lower submission numbers of psittacines and pigeons. However, the diagnoses of Paramyxovirus of pigeons showed a slight increase compared with the previous year.

## **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 6.5% to 13,323.

The most frequently recorded species were dogs (54% of total diagnostic submissions within the miscellaneous class), cats (30.3%) and horses, mules and donkeys (7.3%). 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 increased slightly compared with 2001 but still only 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:

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