

## Enzootic Pneumonia (EP)

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Enzootic pneumonia (EP) is caused by *Mycoplasma hyopneumoniae* and is a common respiratory disease. Clinical signs are seen in 12 to 20 week old pigs, but in a herd breakdown it can affect all ages including adults.

In an uncomplicated infection of *Mycoplasma hyopneumoniae* there is a reduced growth rate and an increase in FCR. Unfortunately, infection with *Mycoplasma* also allows invasion of other secondary bacteria and viruses, often resulting in a much more serious complex disease. It can cause coughing, unthriftiness, decreased growth, and, in severe cases, high mortality.

*Mycoplasma* is a small organism that is neither a bacteria nor a virus. Pigs become infected when infectious droplets are inhaled. It is spread between pigs by direct pig contact, or by sharing air space with infected individuals. It can be brought into the herd by carrier pigs that are not showing clinical signs, and can travel in the air for up to two miles.

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### Clinical Signs

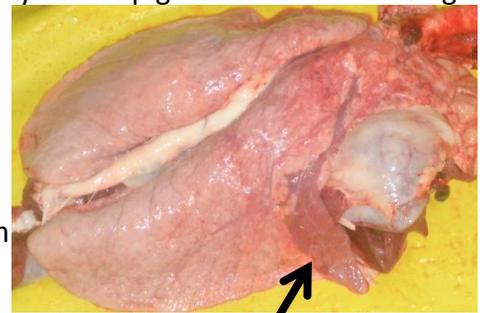
Inhaled air travels via the trachea (the windpipe) to the lungs. On the inside of the trachea there are lots of little hairs called 'cilia' that trap bacteria and viruses in mucous, preventing them from entering the lungs. This mucous is then swept back up to the throat to be coughed out or swallowed.

*Mycoplasma* damages these hairs, causing them to clump together, and they are then shed. This prevents normal clearance of secretory products from the trachea and also allows opportunistic bacteria and viruses to infect the respiratory tract of the pig. *Mycoplasma* also damages the lung itself, from which the lung can recover if this is mild, although it takes a long time. The lung does not recover from severe lung damage however, and that area of the lung is no longer able to function.

In the case of uncomplicated infection with *Mycoplasma hyopneumoniae*, a low grade dry, non-productive cough can sometimes be heard, although not always. It is not possible to tell if a pig has EP from looking at it, as they can look clinically well. Growth in these pigs will be lower though, and their FCR will be increased.

If a herd has no immunity to infection, clinical signs are usually much more severe including lethargy, high temperatures and inappetance. These signs are seen in any age, including adults. During a herd breakdown, growth can be decreased by up to 50% per day. After a breakdown, finisher pigs are unlikely to reach the same growth rate as they previously had.

Breeding animals that are EP positive are less fertile than EP negative stock. In a herd breakdown, fertility can be severely affected, with an increased number of returns and subfertile pigs. Fertility may not recover completely after a breakdown in health.



**Debris pooled in tip of lung lobes, results in a hardened dark red to purple lesion.**

## Diagnosis

In a herd that is known to be infected, lungs can be examined at the abattoir. The lungs are scored to determine level of disease challenge. A low lung score would indicate good EP control.

In an EP negative herd, diagnosis of an acute outbreak is done by taking a sample of lung tissue and culturing the organism from it. We also use a PCR test to identify the organism's genetic material – this enables us to type the *Mycoplasma*. Histopathology is used to examine the damage to the lung microscopically.

If infection is suspected to have been introduced previously, in an EP negative unvaccinated herd, blood sampling for antibodies to *Mycoplasma hyopneumoniae* is carried out to see whether the pigs have responded to the infection and built up immunity to the organism. Immunity can take 2-3 weeks to develop, so blood sampling is not always possible immediately clinical signs are observed as this can give a falsely negative result.

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## Treatment

In an outbreak of disease, or an increase in clinical signs on farm, treatment of individuals or a group with appropriate antibiotics is needed. *Mycoplasma hyopneumoniae* is usually sensitive to Chlortetracycline, Tylosin and Tiamulin. Mycoplasmas are not sensitive to penicillin. Treatment selection is often also based upon what secondary infections are present on farm at the time.

Longer term medication may be needed, particularly in finishers, to control disease.

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## Control & Eradication

Good biosecurity is essential. Ensuring incoming pigs are tested before arrival, and isolation of these pigs prior to entry to the main herd, is essential. Strict biosecurity for visitors and vehicles are also important.

When disease is present, management revolves around reducing the infection challenge to the pigs. Management controls include ensuring pigs are stocked correctly, group sharing of the same air space is limited, rooms are operated as all-in all-out, and washing and disinfection of accommodation is carried out regularly between batches.

There are several commercial vaccines available. These can be given from various ages and have different vaccination protocols, with good overall control generally as a result.

EP can be eradicated from a herd if required by depopulation and repopulation with EP negative stock; or by a partial-medicated depopulation where sows are both vaccinated and medicated to eradicate infection – these can be around 90% effective.

**Please speak to your Vet to discuss any questions you may have about EP on your farm.**