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## RABBITS

### General comment:

Drugs specifically authorised for use in rabbits are required. Apart from the economic problems posed by adherence to 28-day standard withdrawal period, use of cascade is not always possible: lack of data for establishing treatment protocol for rabbits, pharmaceutical form not adapted to administration in drinking water, for example.

*ANMV update 2018 and sector meeting on 19/03/20 regarding HDV*

| Pathology  | Therapeutic alternatives identified               | Health impact | Economic impact | Comments   | ANMV (French Veterinary Agency) comments  |
|--|---|---------------|-----------------|--|---|
| <b>Pasteurellosis</b>  | AB<br>Autologous vaccines.<br>Farming techniques. | 5             | 5               | Widely used antibiotics for treatment of pasteurellosis, therefore significant health impact. Costly if you take into account farm and abattoir economic losses.<br><b>Commercially available vaccines ineffective</b> (publications by scientists).<br>Autologous vaccines have limited effectiveness.<br>NB: INRA (agricultural research institute) research into development of genetic resistance to Pasteurella bacteria.<br>Suspected link between mycoplasmosis (cf. below) and pasteurellosis: demonstrate and then <b>plan development of bivalent vaccine?</b> | Authorised vaccine: Landavax® containing <i>Pasteurella multocida</i> (marketing stopped in 2013) |
| <b>Respiratory illnesses caused by mycoplasma and Bordetella</b> | AB  | 5             | 5               | Presence of mycoplasma rarely shown: because unusual, or due to laboratory problems? Link with Pasteurella (cf. above)<br>Bordetella: no studies available enabling their role to be pinned down (pathogenic, permissive, co-pathogenicity).   |   |
| <b>Coccidiosis</b>   | Additives authorised for use in food.             | 3             | 3               | Formulations containing sulfadimethoxine with MA, but sector wants their use restricted and a longer WP imposed due to risk of residues (food contamination?), poor end product image and hindrance to export. No residue issues if used in drinking water, but  |   |

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|  |  |                 |   | solubility compromised by acid pH. <b>Veterinarians are waiting for additional studies on these MA in order to be able to prescribe more safely.</b><br>Limited effectiveness of additives (many types of resistance).  |  |
| <b><i>Clostridium perfringens</i> or <i>Clostridium spiroforme</i> enterotoxemia</b> | AB   | 3               | 3 | Bacteria which contribute to digestive disorders: oral antibiotics are much used in treatment of Clostridia/EEL+/-Coccidia, inevitable impact on resistance to antibiotics.<br>No vaccines containing <i>C. spiroforme</i><br>No studies on vaccines with <i>C. Perfringens</i> MA. Farmers who have used these vaccines have not found them effective and are not willing to use them again <b>without clinical studies that allow a protocol to be established.</b> | Available vaccines for rabbits: Coglavax® and Coglamune® containing Type A, C and D <i>Clostridium perfringens</i> <b>but not <i>C. spiroforme</i>.</b><br>Nothing on <i>C. Spiroforme</i> (ANMV 2018) |
| <b>Ringworm</b>  | No formulation with MA for the species (parasiticides for ruminants and swine, Imaveral)<br>Foreign vaccines imported for Trichophyton, none for Microsporum, and no scientific studies on these vaccines for ringworm in rabbits. | 3<br>(zoonosis) | 3 | Ringworm does not cause mortality on farms and, other than extreme cases of zoonosis of family members or even workers, visitors or neighbours, farmers are not willing to spend a lot of money on treatment giving limited results (no scientifically-endorsed protocols on ringworm in rearing).  | Request for MA for vaccine never submitted.  |
| <b>Pinworm</b>   | No formulation with MA (or MRL) for the species (parasiticides for swine, ruminants, poultry)  | 2               | 2 | Cascade allows use of parasiticides (benzimidazole) for swine, ruminants and poultry but there are two problems: 28-day standard withdrawal period and dissolving in drinking water not envisaged for these products (except for Solubenol and Flimabo, designed to be mixed with drinking water).  | Panacur® (drinking water)  |
| <b>Follicular stimulation (follicular maturation)</b>                                | Farming techniques.<br>Prostaglandins (still off-label!)   | 1               | 2 | GnRH given on day of AI but cannot be a replacement for PMSG given a few dozen hours beforehand. <b>There needs to be a specific MA for PMSG (widely used).</b>   |  |
| <b>Ear mange</b>   | No formulation with MA for the species   | 1               | 1 | Uncommon illness on modern farms, found above all in farms with old material and in farm-rearing.   |  |

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|  | Avermectin used in cascade approach.   |                                |                   |   |  |
| <b>Inflammation</b>  | No formulation with MA for the species   | 1                              | 1                 | Lack of data on usefulness of anti-inflammatory in combination with antibiotic treatment and treatment protocol. Off-label use of paracetamol and "Metacam".  |  |
| <b>HV strain staphylococcus</b>  | AB, autologous vaccine   | 4                              | 4                 | Bacteria which often present multi-resistance. Scientific studies show that this strain, specific to rabbits, is a European clone.<br><b>Vaccination studies are required!</b><br><b>More studies are also needed on antibiotic treatment: which molecules? which protocols?</b><br>No zoonotic cases reported. | Autologous vaccine (partial solution, not complete eradication)  |
| <b>LV strain staphylococcus</b>  | AB   | 4                              | 3                 | Carriers relatively widespread. Diverse strains, some similar to community <i>S. aureus</i> in humans (publications on this area).  | Autologous vaccine (partial solution, not complete eradication)  |
| <b>Severe true colibacillosis E. coli O103 PCR eae-positive or E. coli PCR eae-positive with lesions</b> | Autologous vaccine<br>Vaccine being prepared?<br>Fluoroquinolones (apramycin in drinking water could be used although WP is a problem, whereas there is an MA for apramycin in feed which has a 0-day WP and studies carried out by administration of APRALAN soluble powder for oral solution!) | 3                              | 3                 | Major problem which seriously jeopardises affected farms. Studies of vaccination solutions (scientific analyses of autologous vaccines or MA) are eagerly awaited.  | No application for vaccine MA has been submitted.<br><br>Cf. apramycin application (ANSES notice 28/10/2013)   |
| <b>New variant HDV</b>   | <b>ANMV meeting with the sector on 19/03/20:</b><br>Vaccines for new variant HDV: insufficient efficacy, SPC protocols called into question and cost too high for mass   | 3                              | <b>5</b>          | Financial issues: cost of vaccine<br><b>ANMV meeting with the sector on 19/03/20:</b><br>There are currently 2 vaccines for the new variant available on the market:<br>• FILAVAC VHD KC+V 1 (Filavie): SPC recommends vaccination at 10 weeks old, but that is the age when sent for slaughter: far too        | <b>ANMV meeting with the sector on 19/03/20:</b><br>➤ ATU possible if a licence holder identifies a strain that differs sufficiently from the new variant of the 2 current |

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|                 | vaccination during fattening. Very tense situation, with 28% of farms affected in 2018 and 26% in 2019, in spite of the action plan implemented. <b>10% of cessation of activity linked to HDV in 2018 and 35% in 2019.</b> |                                | late in a contaminated environment <ul style="list-style-type: none"> <li>• ERAVAC (Hipra): SPC recommends vaccination after 30 days old.</li> </ul> | vaccines and if the cost is acceptable to the sector (request assessment). <ul style="list-style-type: none"> <li>➤ Pharmacovigilance feedback is highly useful, even if it concerns usage not indicated in SPC.</li> <li>➤ Exchanges regarding different effective vaccination protocols can also usefully be shared. By contrast, avoid using half doses, because this serves no purpose and is wasteful expenditure.</li> </ul> |