**E \_ Coli infection**

**Avian colibacilosis.**

**Colibacilosis is designated of ( a group of diseases in which E \_ coli is primary or secondary causative agent .)**

**Susceptibility :\_ this diseases occur in many birds , ( domestic and wild ) , there is many serotypes are known , but only few are pathogenic.**

**Causative agent :\_ many serotypes isolated from avian such as O1 ; O2 ; O7 (10 \_ 15 % )of E \_ coli present un GIT of mamales and birds . most of E \_ Coli present in fecal material of birds .**

**Source of infection : \_**

**1 \_ Fecal material that contaminant environment ( e . g air , water , food ped ) .**

**2 \_ contaminated eggs**

**3 \_ contamination of egg shell with fecal material .**

**4 \_ infection of ovarian follicles .**

**5 \_ infection of ovarian ( salpingitis ) with E coli .**

**Site of infection :**

**1 \_ in hatched chicken from infected egg in yolk sac , some of embryo are dead before hatching at 18\_20 day**

**2 \_ other chicken die after hatching mortality remain for 3 weeks after hatching .**

**Air Saculitis**

**It is an infection of respiratory tract with other pathogenic and E\_ coli is a secondary causative agent .**

**E . g**

**1 . N . D**

**2 . i . B**

**3 . Mycoplasma gallisepticum**

**Source of infection : \_**

**Contamination of environment by fecal material .**

**Rout of infection : \_**

* **Bad ventilation will increase the concentration of ammonia which lead to excretion of uric acid that irritate the epithelial cell of respiratory tract . ( Predisposing factor )**

**Clinical Signs:\_**

**1 \_ Rales and gasping**

**2 \_ Depression**

**3 \_ Loss of appetite**

**4 \_ Ruffle feathers**

**5 \_ Humped back , legs , retracted back .**

**6 \_ Emaciated at die .**

**Gross Lesion :**

**1 . in early cases the air sac contain froth material**

**2 . air sac are turbid at thickness**

**3 . in sever cases air sac may contain cheesy material**

**4 . some times the infection may extended to the abdominal air sac and visceral organ and causing fibrinous pericarditis and peritonitis**

**Salpingitis : \_**

**Salpingitis is an inflammation of oviduct as a result of : \_**

**1 . infection of oviduct follicles.**

**2 . Extension of infection from the left abdominal air sac.**

**3 . entery of E \_ coli from cloaca to oviduct through vagina.**

**4 . the oviduct is distended and contain inflammatory exuded, some times contain chessy material . with bad odour .**

**Yolk sac infection**

**This condition causes mortality during the first week after hatching either from :-**

**1.infection occur from infected egg.**

**2.Extension of infection from the navil (omphilitis)**

**Clinical signs and gross lesion :**

**1.depressed chicken .**

**2.distended abdomen .**

**Yolk is normally absorbed in 72 hours but here yolk is not absorbed.**

**4. yolk converted from yellow to brown or greenish colour .and the consistency of yolk become watery .**

**5. the wall of yolk sac may contain hemorrhage and some times the sac is ruptured.**

**Control :**

**Prevent of egg infection .**

**Panophthalamitis**

**E.coli is reach to the eye from blood , one or both eyes may be infected characterized by accumulation of pus in the anterior chamber of eye , opacity and green colour of the eye may be happen .**

**Arthritis and synovitis**

**The infection reach to the chicken through blood or external injury (truma )**

**Clinical signs :-**

**1. lammness .**

**2. Swollen of join or swollen of the tendon sheath with painfull join**

**3. accumulation of inflammatory exudates (pus) inthe joint , especially hock joint .**

**Enteritis**

**Enteritis : occure due to e coli infection characterized by :-**

**Clinical sings:-**

**1. destention of intestine.**

**2. the wall of intestine become oedematus , thick and lumen contain**

**mucoid material .**

**3. diarrhoea may be happen .**

**Swollen head syndrom**

**1. swollen face**

**2. red skin**

**3. the fascial oedomatus and some times there is chessy material**

**4. necrosis**

**Diagnosis :- diagnosis of E. coli infection is isolation and identificat of E .coli**

**Treatment:-**

**E .coli show resistance for antibiotic so we**

**should make a sensitivity test to know the**

**specific antibiotic to used .**

**Control:-**

**1. air saculitis due to mycoplasma infection must be treated for 3 days**

**2. control of viral disease such as N.D ,I.B**

**3. observing the flock after vaccination**

**especially (ND,IB) because these disease**

**make the animal strees**

**4. good ventilation of houses to reduce the level**

**of ammonia and CO2**

**Infectious coryza**

**Etiology :**

**Haemophilus gallinarum**

**Transmission :**

**1. droplet infection**

**2. introduction of an infected chicken into a susceptible flock**

**3. nasal discharge**

**4. air- born infection**

**Clinical signs:-**

**Incubation period 36-48 hours after exposure to the infection**

**1. swollen face and sinus**

**2. clear discharge changed to purulent**

**3. conjuctivitis**

**4. sometimes the eye be closed partially or completely**

**5. infection may be involve one or both sinuses**

**6. period of disease is aboute 2 weeks thus the chicken are immuned for 2-3 months**

**7. morbidity may reach 100% mortality is rare**

**8. recovered chicken remain as a carrier**

**9. nasal discharge make breathing and coughing difficult**

**Diagnosis :--**

**1. Clinical signs (symptoms)**

**2. isolation and identification of (m.o) micro organisms**

**Treatment:-**

**1. Sulphathiazine and sulphadimetheoxine 5-7 day**

**2. subcutaneous injection of streptomycin**

**3. erethromycin through drinking water**

**4. combination of streptomycin inj and feed medication with sulpha give good result.**

**Necrotic enteritis**

**Etiology :- clostridium periferinges**

**Source of infection :-**

1. **Fecal material**
2. **Food and water contaminated with feaces which contain these bacteria**

**There are many predisposing factors inhance in affecting with this disease :-**

**1. infection with some spp of Eimeria**

**2. some foreign material in food which cause damage to the mucosa**

**3. material that slowing the intestine movement (peristaltic movement of intestine)**

**Clinical signs :-**

**Acute case associated with high morbidity and mortality**

**1. sudden death**

**2. depression**

**3. loss of appetite**

**4. diarrhea**

**5. ruffled feathers**

**Diagnosis :- make smear from affected part (intestine) and stain to see bacteria**

**Comparative between ulcerative and necrotic enteritis**

**Necrotic enteritis**

1. **diphtheratic type (necrosis)**

**2.Liver congested**

**3. part of intestine**

**Ulcerative enteritis**

**1.ulceration**

**2. liver necrosis**

**3. involve all parts of intestine**

**Treatment:- use broad spectrum antibiotics such as pencilline and bactiracin in combination for 3 days give good result.**

**Avian tuberculosis**

**Causative agent , etiology ,causes**

**Mycobacterium avium**

**This spp have 1,2,3 serotypes**

**Source of infection:-**

**1.fecal material**

**2. air contamination with these bacteria which reach from respiratory discharge**

**Clinical signs:-**

**1.depression and emaciation**

**2.appetite remain normal and good**

**3. diarrhea**

**4.reduce egg production**

**5. lameness**

**Gross lesion**

**Muscle atrophy (breast muscle) we can see lesion in many organ as liver ,spleen , intestine , bone marrow**

**These lesion are different size ,irregular shape nodules greenish or yellowish color**

**These nodules may be so small or several centimeter in diameter**

**Diagnosis:-**

**1. mortality may continue for long time (chronic disease)**

**2. p.m (post mortum )**

**3. smear from affected nodules and stain with acid fast (zeel nelson)**

**Diagnosis**

**1. isolation on special media**

**2. culture for long time aboute 18 days because it start to grow after 10 days.**

**3. tubercilline test**

**4. agglutination test**

**Treatment :- no treatment**

**Burn the dead chicken and clean the farm and house of chicken**

**Fowl cholera**

**Avian pasterlosis**

**Etiology**

**Pasturella multocida**

**Transmission:-**

**-----------------------**

**1.Carrier birds, rodents carrier**

**2. nasal discharge (horizontal transs)**

**3.canabilisim of dead chicken**

**4. artificial insemination**

**5. mechanical transmission**

**6. Contaminated of food and water by salivation and lacrimation**

**Clinical sings**

**---------------------**

**Incubation period 1-3 days**

**Acute case**

**1.inability to walk**

**2.ruffled feathers**

**3.diarrhea**

**4. respiratory distress**

**5.sudden death 6. Before death we see increase salivation and lacrimation**

**7.synosis of wattle**

**Chronic case:**

**1.swolling of wattle and hardness due to containing yellowish cheesy material .**

**2.maybe infection bones or middle ear so the head may be turn and resembles N.D(Newcastle disease)**

**Gross lesion:**

**1.petichal and path haemorrhage in the internal organs**

**2.enlarged liver and have necrotic foci on surface**

**3.congestion of (m.m) mucous membrane of intestine especially deudenum**

**4. in chronic case there is cheesy material in joint and bones**

**Diagnosis :**

**1.clinical signs**

**2.gross lesion**

**3. isolation of causative agent**

**Treatment:- using antibiotic such as :**

**Sulphamethoxine**

**Sulpha mezathine**

**Chlorotetracycline**

**Novobiocin**

**Control :-**

**1.good mangment to avoid introduction of infection**

**2.intermittent medication after outbreak**

**3.vaccination , two types of vaccination are available**

**a. bacterin**

**b. live attenuated vaccine**

**Newcastle disease**

**Is an infectious higliy contagious of bird mainly chicks turkey,clinical signs pathiological lesions depend on :\_**

**1.virulence (stregth)of virus**

**2.the dose**

**3.route of exposure**

**4.the immune statue of bird**

**5.the age**

**Causative agent:\_**

**It is RNAviruse belong to paramexo groupfrom of N.D**

**1.The re are many forms (doyles form)it is charactrized.by haemorrhagic ulceration in digestive tract of infeded bird in addition this form it can affect all ages of birds produce high mortality( 90%) this type of N.D all called velogenic, visero tropic N.D straine.**

**2.Beach form:-**

**1.this form also effect all ages of birds**

**2.mortality 90%**

**3.sever respiratory signs only**

**4.it called velogenic pneumo tropic N.D viruse**

**3.Beaudett form:**

**It is charactirized by sever respiratory &nervous signs**

**Hitchner form:\_ this form is mild form &produce signs in small chickes when exposed to high dose through r. system.this type also called lintoginic N.D viruse.**

**Transmission of viruse**

**1.throgh ria**

**2.respiratoray route**

**Clinical signs:\_**

**R.signs charactrized by**

**\*sneezing**

**\*coughing**

**\*dyspnea**

**\*nasle distcharge**

**\*rales**

**\*lacrimation,congecativitis**

**\*swollen head**

**\*greenish diarrhoea.**

**In nervous signs charactrized by**

**\***

**\* Air sac :\_**

**---------------------------**

**In early stage air sac may contain frothy exudates**

**In late stage we see cheesy material in air sac .**

**Some time complication may take place causing fibrinous pericaralitis at fibrinous peri hepatitis may occur .**

* **Congectiva : \_**

**Congectiva may be congested or haemorrhagic .**

* **Liver :\_**

**It is usually enlarged may contain patched haemorrhag or focal necrosis .**

**Spleen : \_**

**-----------------------------**

**Is l also usually enlarged contain necrotic foci**

**Kidney : \_**

**------------------**

**Swolled pale at congested kidney.**

**Digestive tract : \_**

**------------------------------**

**There is haemorrhegic ulceration seen in proventriculus , intestine mainly in illium at deudenum**

* **Haemorrhagic enteritis .**
* **Enlargement the caecal tonsils**
* **We see small focal necrosis in caecum .**

**Diagnosis : \_**

**--------------------**

* **isolation and identification of the virus by**

1. **\_ HI test**
2. **\_ Flurecent technique**

**Treatment : \_**

**Na treatment , antibiotic**

**Is used to minimized complication with E \_ coli at mycoplasma**

**Vacination : \_**

**---------------------------**

**Vaccination is only method of prevention , there is different type of vaccine at method program which applied in this disease according to the area in endemic area**

**These programs are**

**1 . B1 used at the age of 7 day by drinking water or aerosol**

1. **second vaccination at the age of 15 days either by B1 or clon 30 .**
2. **third vaccination by C30 or lasota strain**

**Infectious Bronchitis( I B)**

**Acute highly contagious diseas coused by avirus , charactrised by respiratory signs , marked drope in egg produation**

**Causative agent : \_**

**Corona virus , there is many serotypes**

**1 . conecti cat 2 . ma ssachusetts**

**Tansnission method at source of infection :**

**1 . by lnhalation of virus which expeld by coughing from infected chicken .**

**Cinical signs : \_**

**-----------------------------**

**. in baby chicks :**

**1 . coughing , sneesing . gasping , rales , nasal at ocular**

**discharges**

1. **. wet eges and nostrils**
2. **.facial swolling**
3. **. weekness at depression**

**Growing birds : \_**

**-------------------------------**

**1 . gasping , coughing , rales may by hered**

**2 . nasal and ocular discharge rarly**

1. **. no facial swelliny**

**Laying chicken : \_**

**--------------------------------**

**1 . respiratory sign**

**2 . marked drop in egg production**

**3 . change in egg quality**

**A . soft of egg shell**

**B . misshapen eggs ( rough suface , corigated due to abnorual deposition of calcium**

**C . albumin of egg may be watery**

**D . hatchability of egg is droped**

**E.Mortality is less**

**Gross lesion : \_**

**-----------------------------**

**1 . mild to moderate infamation of Respiratory tract , there may be or not (air saculitis) .**

**2. the trachea contion exudates ( may be serous or mucoid or may be cheosy material ) .**

**3. congestion of trachea**

**4. air sac thick at turbid also may be heving exudates**

**5. the kidney some time swollen at the weter contain uric acid crystal especially in young birds .**

**Layers : \_**

**-------------------**

**Overy oviduct ( Reproduction ststem ) : \_**

**1 . abnormalities in oviduct**

* **Atrophy**
* **Shorten then normal**

**2 . yolk material is through out the peritoneal cavity**

**Dvarian follicles appear larger then normal .**

**Soft shealled or incomplete eggs are found in abdominal cavity .**

**Diagnosis : \_**

**-----------------------**

**I. p very short ( 36h ) high morbidity rate : \_**

**1 . virus isolation**

**2 . nutrilisation test**

**3 . determine of anti body liter of I B during the disease after 3 \_ 4 weeks after that ( increasing )**

**4. I B virus can agglutinate RBC of chicken .**

**5. HA , HI**

**6. Expermental immunized at non immunised**

**chicken and see the clinical signs appeare in non immunized chicken after 24 \_ 36 h**

**7. ( F . T ) flurecent technique )**

**Diffantial diagnosis : \_**

**---------------------------------**

**1 . N.D**

**2 . ILT**

**3 . Corysa**

**4 . air saculitis caused by E \_ coli at mycoplasma**

**5 . Gumboro**

**Prevention : \_**

**--------------------------**

**1 . isolation of the flock with good management**

**2 . Vaccination is effective if it is contain varity of serotypes of this virus .**

**Fowl pox**

**Fowl pox in chickens is charactrised and insid the mouth there is diphtheritical lesions in the mouth &upper part of the trachea.**

**Suscceptability:\_**

**Domestic &wild birds of all age**

**Incidence:\_**

**This virus has wild distribution it is (diseas) is indemic in tropical &subtropical regions**

**Causative agent:\_**

**1. virus belong to avian pox viruses**

**2.there are many strain within the group which differ in their pathogenicity to various species of bird**

**Transmission:-**

**1.insercts carry the virus**

**2.mechanical spread**

**Clinical signs:\_**

**Incubation period 4\_14 days there are 2 forms of diseas:**

**A .\_cutanous form**

**\*there are local areas of inflammation of featherless parts of the skin**

**\* formation of small noduales**

**\* increase in size and become yellow then becom rough gray dark brown in colowr**

**\* the lesion covered by scat like lesion**

**\* lesion may be present on any part of bodg surface**

**B. diphtherlic form:-**

**\* the lesion found in mucous membrane**

**\* the lesion becom white ,slightly elevated nodules wich rapidly increase in size and becom yellow**

**\*the lesion is covered with cheesy necrotic diphtheric membarane**

**\* the lesion found in upper rsepiratoray system and sinuses,mouth and eyes therefore the birds die or become blind**

**Diagnosis:-**

1. **Clinical sign**
2. **lesions**
3. **isolation of virus**

**Treatment:- no specific treatment**

**Control:-**

**Vaccination only effective**

**Infectious bursal diseaa**

**I.B.D**

**Gumboro: it is contagious viral disea whid effect chicken**

**\*the target organ is virus this gland therefore the imunity of the bird become very weak this gland make b\_lymphocyh which is very important for the immunity of the bird.**

**Susceptibility:\_**

**All ages are susceptablr chickens aat 3\_7 weeks show very marked clinical signs**

**\*\* note:- chickens under 2 weeks of age may be affected but donot show clinical signs**

**Causative agents :-RNA virus.**

**Transmission:-**

**\*diredct method (attachment)**

**\*indirect method(tools, persons,insects etc.)**

**Incubation period :2\_3days**

**morbidity:may reach to 100%**

**moratality:depend on**

**1.age of birds**

**2.immunity**

**3.virulence of virus course of diseas 5\_7days**

**Clinical Signs : \_**

**1 . suddan onset of diseas**

**2 . depression , loss of weinght , ataxia and trembling .**

**3 . Diarrhoea ( white or yellowish white**

**4 . pick vent region .**

**5 . tremor or sheaking of body head .**

**Gross lesion : \_**

* **dehydration and congestion of musde of body**
* **haemorrhare on thigh and brest muscles**
* **haemonhage in proventi culus at the junction between this stowash at Gissard**
* **Kidney : enlarged at pale**
* **Ureter : contaim urate or wric acid**
* **Liver : pale due to anemia**
* **Bursal gland : enlarged at surrounded by gelatinow colorless or greenish material viscus .**

**Diagnosis : \_**

**1 . history include**

* **Sudden onset of the disease**
* **High morbidity ( 100 % )**
* **Rapid recovery**

**2 . clinical signs**

**3 . gross lesion is the key of diagnosis**

**4 . nistopathological lesion**

**Differential diagnosis : \_**

**1 . N.D**

**2 . Haemorrhagic syndrome**

**3 . ( I . B . H ) inclusion body hepatitis**

**Teratment : \_**

**No specific treatment**

**But there is must be : \_**

* **Improve management**
* **Lsolation of infected bird**
* **Give vitamin K to prevent haemorrhage .**

**External parasite**

**External parasite of poulty have been recognized in most poulty producing areas, high incidence and serious economic loss are to tropical & subtropical regions**

**The economic losses are due to heavily parasitized.**

**Parasitic infestation depend on:-**

**1.number of parasite**

**2.nutritional status of the host**

**3. intercurrent diseases the external parasite are divided into four group.**

**a.lice b.mites c.ticks**

**4.fleas**

**LICE : lice infestation in poultry is characterized by**

**1.loss of weight**

**2.poor grouth**

**3.decreas in egg production.**

**Life cycle: male &femal lices spend entire live cyclic on the hosteggs of lices are laid in clusters which adhere to the feathers and it hatch in 5\_8 days.**

**Each lice matured in 2\_3 weeks and survives on the host for several months.**

**Lice cannal survive more then a week once removed form then host.**

**Clinical signs:**

**The lice are wandered**

**\*in breast ,abdomen and under the wings.**

**\*the lice feed on the skine debris and feathers.**

**\*the damage of the skine due to continuouse scratch of chicken**

**\*loss production and general un thriftiness are the only signs**

**TREATMENT:**

**Dusting or dipping of affected chicken or hens with apprived insecticides, like modathion,carbaryl,deriss.**

**Contral:-**

1. **Regular inspection of the flock**
2. **In endemic are spray the flack with suitable insecticide**
3. **P reuent entery of infested chicken or hens into lice free flock.**

**Mites:**

**Mites infestation in poultry is characterized by poor grouth ,drop in egg production and anamca**

**Life cycle :**

**Mites lay eggs in proultry house then it hatch in 2\_3 days and moult into nymph which feed on the hose , then numph moult twice into adult mite.**

**The cycle may be comleted within aweek or month.**

**The adult mites survive for several month without feedin.**

**Clinical signs**

**1.Red mite**

**\*mite feed on the host during night and hide away during the day.**

**\*the mite suck blood and cause restlessness , poor egg production**