Silk Worm Diseases		
S.No	**Question**	**Answer**
150	How the silkworm larva infected with pebrine looks like	Pebrine is a disease caused by a parasitic microsporidian, *Nosema bombycis* Nageli 1. Diseases larvae show slow growth, undersized body and poor appetite. 2. Diseases larvae reveal pale and flaccid body. Tiny black spots appear on larval integument. 3. Dead larvae remain rubbery and do not undergo putrefaction shortly after death.
151	From where the pathogen of pebrine comes from ?	1. The pathogen comes from infected eggs laid by infected mother moths 2. May exist in rearing facilities or mulberry gardens as spores 3. Comes from wild insects naturally infected with Nosema bombycis.
152	What precautions are to be taken to prevent ?	1. Disinfect the rearing room and appliances before the rearing starts 2. Purchase silkworm eggs certified as free of pebrine 3. If the hatching is poor and many dead eggs remain, diagnose hatched larvae 4. Reject the crop when spores of Nosema bombycis are detected from larvae 5. Destroy diseases silkworms by burning. 6. After the rejection disinfect completely rearing rooms and equipments.
153	What should be done if silkworm larvae under rearing are diseases by pebrine ?	1. Examine larvae before larvae cross preferable the 2nd moult 2. If the crop is diseases, stop further rearing, collect all the larvae and silkworm waste and burn them 3. Disinfect facilities and equipments completely 4. Disinfect the silkworm waste pit by dusting 5% bleaching powder with slaked lime 5. Get new batch of larvae / egg.
154	How Grasserie diseases silkworm larvae look like ?	The Grasserie disease is caused by a virus – Nuclear polydedrosis 1. The larvae will be sluggish with swollen intersegmantal region 2. The integument of diseases larvae will be fragile and brakes easily 3. On infury milky fluid containing many polyhedral inclusion bodies oozes out from the larval body 4. The diseases larvae do not settle for moult and show shining integument 5. The larvae appear to be restless 6. The dead larvae hand by hind legs head downward.
155	Are the CSR breeds more susceptible to grasserie ?	CSR breeds are as susceptible to the pathogen causing grasserie as any other Bivoltine race.
156	Grasserie is observed in chawki stage. Why?	1. If grasserie is observed in chawkie stage, then the chawke larvae must have been infected while hatching or during chawkie rearing 2. Chawkie larvae may get infected with the silkworm egg surface is not disinfected 3. The larvae also get infected, when the silkworm rearing hous is not disinfected and hygine is not practiced effectively during chawkie rearing 4. The disease development in early instar rearing is faster

		as the early instar silkworms are reared at high temperature. As the larvae are also smaller in early instars than the later instars, the virus spread to all tissues in short period,
157	Grasserie is common during final instar or befor spinning. Why?	1. It depends on the instar / time the silkworm got infected by the pathogen. 2. If silkworm gets infected during the 4th or early 5th instar, the symptoms of the disease will be observed prior to spinning or pre-pupal stage. 3. In silkworm infected with the high dose of virus, the ecdysone harmone required for moulting and maturation will be destroyed. The larval period will be simply continued due to lack of ecdysone till the larae develop the disease. Thus we see the disease associated with worms that failed to moult / spin the cocoon 4. If the infection level is low, larva pupate but die in pre-pupal or pupal stage resulting in melting.
158	Grasserie is common during summer. Why ?	1. At high temperature, the rate of grasserie disease development is high 2. During summer, the silkworm develop sysmptoms of grasserie in 4-5 days because of high temperature.
159	How to prevent grasserie in silkworm ?	1. Disinfect silkworm raring house, its surrounding and appliances before brushing 2. Conduct additional disinfection with 0.3% slaked lime solution 3. Rear chawki silkworm as well as later instar silkworm under strict hygienic condition. 4. Avoid high (28-35C), low rearing temperature (10-20 C) and rearing humidity (<70%). 5. Dust slaked lime uniformly when larvae settle for moult @ 3 g/sq.f for 1st and 2nd moult and 5g/sq.ft for 3rd and 4th moult. 6. Dust bed disinfectant like Vetcare Vijetha every time the larvae comes out of moult and on the 4th day of final instar as per the quantity cited above 7. Reed quality mulberry
160	What are the symptoms of flacherie ?	Bacteria and viruses cause the disease individually or in combination. Fluctuating temperature and humidity and poor quality mulberry predispose the disease development. 1. The diseased larvae will be stunted in growth, dill lethargic soft and appear flaccid 2. The cephalothoracic region may be translucent 3. The larvae vomit gut juice, develop dysentery and excrete chain type fecus. 4. The larvae on death putrefy, develop different and emit foul smell.
161	What is Thatte roga and how it is caused?	1. Thatte roga is a type of flacherie in silkworm 2. It is cause by streptococcus sp. And or Staphylococcs sp of bacteria in association with infectious flacherie virus 3. These pathogens are releases into the rearing tray/platform by diseases larvae along with feces and vomit 4. The released pathogens contaminate the rearing tray, platform and the mulberry leaf I the bed. They survive in the rearing tray/platform for long time and cause disease if they are not disinfected effectively. 5. They cause the disease in larvae that re reared in the

		contaminated tray. The rate of disease development depends on the temperature and humidity in that particular tray. 6. The bed temperature and humidity will be high in the tray in which there is accumulation of feces, wasted leaves and poor air circulation. Such conditions are suitable for the bacteria to multiply in the larvae and rearing bed. 7. In presence of virus in the larvae and high temperature condition, the disease development will be faster. 8. As the infection takes place in the particular contaminated tray and develops bases on the environmental conditions in that particular tray, the disease is noticed. In the tray and later spread to other trays through secondary contaminations.
162	Does the quality of mulberry has any relation with the occurrence of flacherie ?	Yes. Silkworm fed on highly nutritious mulberry will have better ability to defend against the infection than the larvae fed on poor quality mulberry.
163	Will the feeding of tender leaves lead to grasserie and flacherie diseases ?	Tender leaves themselves do not cause grasserie or flacherie. However, it favours the disease development especially in the change is made abruptly after feeding course leaves for sufficiently long time.
164	During the final instar silkworm rearing and on mountage the flacherie is common. Why?	1. If the silkworm gets infected during the 3rd , 4th or early 5th instar, symptoms of the disease will be observed prior to spinning or pre-pupal stage. If the infectin is in late 5th instar, the mortality will be in the pupal stage 2. If the infection is in early instar silkworm i.e., 1st and 2nd instar. 3. The occurrence of the disease is also governed by the environmental and nutritional factors.
165	How to prevent flacherie and Thatte roga in silkworm rearing ?	1. Disinfect the rearing tray by dipping in disinfectant for 10 minutes 2. Do not smear the rearing tray with cow dung 3. Rear silkworm on good quality mulberry 4. Practice rearing and personal hygiene during the rearing 5. Avoid accumulation and their fermentation of feces and uneaten leaves in the rearing bed 6. Provide good cross ventilation in period of high humidity. Dust dry slaked lime. 7. Dust Vetcare Vijetha as per the recommended quantity and schedule
166	What are the symptoms of muscadine?	White muscadine is caused by a fungus Beauveria bassiana and the green muscadine is caused by a fungus Spicaria prasina. Aspergillosis is common in young age silkworms and the infected larvae will be lustrous and die. Dark green (Aspergillus flavus) or rusty brown (Aspergillus tamari) mycelial cluster are seen on the dead body. 1. The diseases larvae prior to death will be lethargic and on death are flaccid 2. oil specks may be seen on the surface of larvae 3. They gradually befome hard, dry and mummify into a white or gree coloured structure 4. The diseases pupae will be hard, ligher and mummifies
167	How to prevent muscardine disease in silkworm.	1. Disinfect rearing house and appliances 2. Reduce silkworm bed humidity by disting dry slaked lime powder afer bed cleaning 3. Dust be disinfectants such as Vetcare Vijetha and

		Vijetha supplement as per schedule 4. Collect all the diseased larvae dispese into 5% bleaching powder in slaked lime and dispose off by burning 5. practice rearing and personal hygienie during rearing 6. Practice pest control measure against mulberry pests such as leaf roller and Bihar hairy caterpillar 7. Adopt all anti-muscardine measures at village level.
168	Why muscardine is common during winter and rainy seasons ?	Muscardine is common in winter and rainy seasons because these seasons provide favourable environment for infectin, growth and multiplication of a pathogen.
169	What are other anti-muscardine mixtures, which can be used to prevent muscardine?	Vetcare Vijetha, bed disinfectants viz., Resham jyothi, Reshamkeet oushadh, Suraksha are available for prevention of muscardine.
170	What are the benefits of rearing silkworm on mulberry shoot in prevention of diseases in silkworm rearing?	1. Silkworm rearing on platform using mulberry shoots helps to reduce the rate of secondary contamination and the spread of diseases as the frequency of handling the silkworms is minimum. 2. In this method, the silkworms are separated from the source of contamination viz., feces, diseased larvae with every feed 3. The diseased larvae and feces remain at the bottom and healthy larvae moves to the fresh shoots at the top reducing the chances of infection 4. As trays are dispensed with, there sill be reduction in the requirement of disinfectant. It also lowers the expenditure on labour as the labour requirement is reduced in this method.
171	How to dispose the diseased silkworm ?	Collect the diseased silkworm into a basin containing 5% bleaching powder in slaked lime or 2% bleaching powder in 0.3% slaked lime solution. Burn or bury them at a depth of 2 feet in soil