

## **THE EFFECT OF COCOA POD BORER (*CONOPHOMORPA CRAMERELLA*) ON COCOA PRODUCTION**

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### **Abstract**

Cocoa fruit borer attacks all stages of fruit, namely young fruit, mature fruit and ripe fruit. Symptoms of attack on young fruit are indicated by the appearance of large yellow spots on the skin of the affected fruit. His attacks cause an average production drop of 50% with a range of 10% to 90%. The basic method in this writing is descriptive. The data used are the results of previous studies relating to the attack of CPB pests on the decline in cocoa fruit production. The results of the discussion, it can be concluded that the attack of the cocoa pod borer (PBK) is very influential on annual cocoa production. Yield losses due to CPB attacks ranged from 18.25% to 73.04%. However, CPB pests can be controlled through good technical culture measures during cocoa plantation management.

**Keywords:** Effect; Cocoa; Pod Borer, *Conophomorpha Cramerella*; Cocoa Production.

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### **Introduction**

Indonesia is the world's third-largest cocoa producer and exporter after Ghana and Ivory Coast. Cocoa is one of the plantation commodities that has an important role in economic activities in Indonesia because it is one of the commodities as a foreign exchange earner in addition to oil and gas. However, behind the label of the third largest cocoa producing country in the world, Indonesia experienced an increase in the volume of cocoa imports by 156.93% in 2017 and 6.94% in 2018 (BPS, 2019) . According to Musdhalifah as Deputy II for Food and Agribusiness Coordination at the Coordinating Ministry for the Economy, one of the reasons for the increase in cocoa imports is local production which has fallen due to pest attacks (Siringoringo, 2020) . Cocoa pod borer (PBK) is one of the important pests in cocoa plantations. Cocoa pod borer (PBK) is an important insect pest and the main cause of yield loss in almost all cocoa plantation centers in Indonesia (Rieuwpassa & Senewe, 2007) .

Cocoa fruit borer attacks all stages of fruit, namely young fruit, mature fruit and ripe fruit. Symptoms of attack on young fruit are indicated by the appearance of large yellow spots on the skin of the affected fruit. His attacks cause an average production drop of 50% with a range of 10% to 90%. In a regional context, severe CPB pest attacks can cause a decrease in cocoa production by up to 75% and cocoa plantations will lose their role (Herman et al., 2007) . Due to the attack of the cocoa pod borer (*Conopomorpha cramerella Snella*) it can reduce production by 80% and damage to beans by up to 82% (Hayata, 2017) . Altieri & Nicholls (2004) suggested that ecosystems and cultivation practices will affect the level of diversity of natural controllers and the abundance of insect pests, which has a meaning in increasing the stability and sustainability of the ecosystem. This paper aims to examine the effect of the cocoa pod borer on cocoa

production.

## Research Method

The basic method in this writing is descriptive. The data used are the results of previous studies relating to the attack of CPB pests on the decline in cocoa fruit production.

## Results and Discussion

Cocoa pod borer caused by a type of moth *Conomorpha Carmella* Snellen is a very dangerous pest for cocoa commodities, especially in Buleleng and Bali in general. As a result of this pest, the attack can cause very fatal losses, production can drop to 50%, even the quality of cocoa produced is very poor (Sumantia, 2020) . In Sabah Malaysia, in 1982–1984 yield losses due to CPB attacks ranged from 22 to 54%, and losses for all plantations were estimated at 42 to 49% (Day, 1989) . In Bidari District beach, the average attack intensity on all observed plantations was 29%, and yield loss due to increased intensity of cocoa pod borer attacks on all observed plantations reached 333.5 Kg/ha/year or 50.02% (Yudiansyah et al. al., 2021) . In Peunaron District, the average attack intensity in all observed gardens was 20.9%, and yield loss due to increased intensity of CPB pests reached 170,34 Kg/Ha/Year (Pratama et al., 2021) . However, in Rahmat Village, Palopo District, the percentage of cocoa beans damaged by *C. cramerella* in monoculture shade was 31.40%, and polyculture was 22.07% (Agung & Shahabuddin, 2014) . In Mamuju District, the average reduction in yield loss due to CPB at moderate to severe attack intensity was 73.04% (Indrayana & Muhammad, 2017) . The average percentage of seed damage in Muntoi Village is 18.25% and in Solimandungan Village, which is 50.20% (Azim et al., 2016)

The development of CPB is not only influenced by host factors, but environmental factors also greatly determine the level of PBK attack on cocoa pods. Environmental influences cause plant resistance ratings to change between growing environments so that environmental management of cocoa plantations can be manipulated to suppress CPB attacks. Technical culture measures such as the use of resistant clones, balanced fertilization, garden sanitation, and pruning are effective ways to control CPB attacks. The results of previous studies showed that the combination of control techniques was effective and was able to reduce the pest population by 83.50%, attack intensity 90.42%, and yield loss 90.63% (Mandacan et al., 2014)

## Conclusion

From the results of the discussion, it can be concluded that the attack of the cocoa pod borer (PBK) is very influential on annual cocoa production. Yield losses due to CPB attacks ranged from 18.25% to 73.04%. However, CPB pests can be controlled through good technical culture measures during cocoa plantation management.

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