

Insects as a new protein source in animal feed

Óscar Viñals Cámara – June 2020

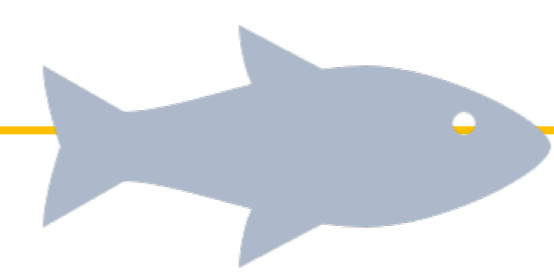
OBJECTIVES

- Current situation and advantages of insect inclusion in animal feed
- Sustainability benefits of using insects
- Public opinion

2017



Regulation 2017/893 authorized use of **insect processed animal proteins in aquaculture**



WHY USE INSECTS IN AQUACULTURE?

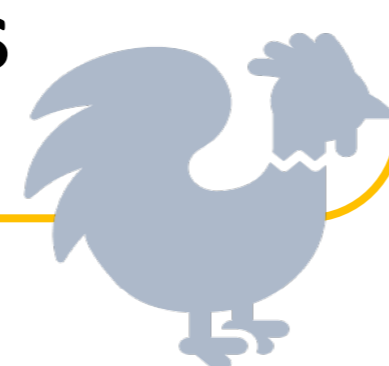
High amount of protein (40 – 60% of DM)			Increase in aquaculture production
Similar aa* composition than fish meal	Better aa* composition than soybean meal	Better aa* composition than meat meal	Fish meal is not a sustainable way to provide all protein requirements

*Aa: amino acid

202?



Insect authorization in **poultry** is expected in the next years



INSECT SPECIES USED FOR ANIMAL FEED

(All About Feed 2017)



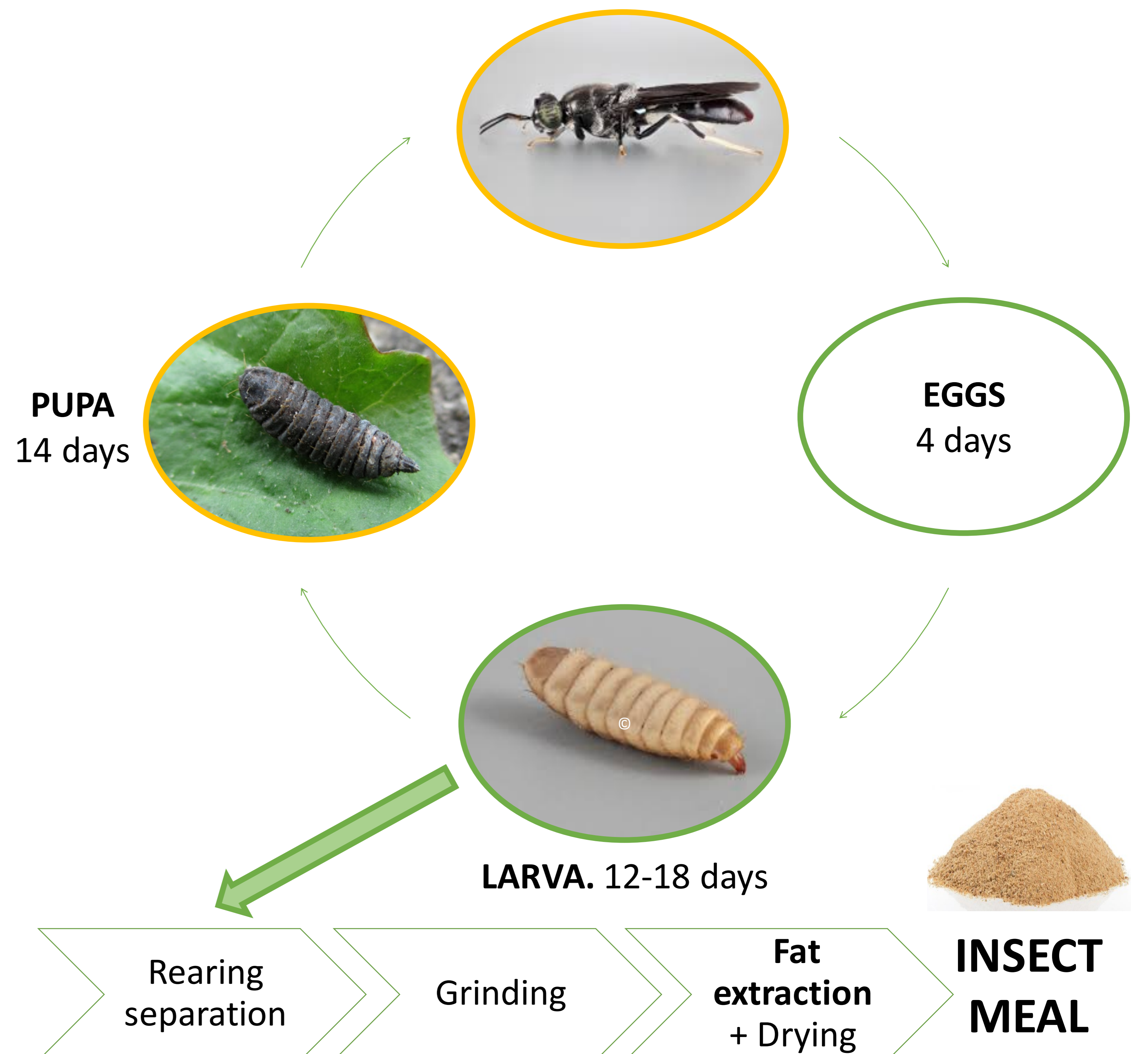
What do you think about the inclusion of insects in farm animal diets? (n=330)



PRODUCTIVE CYCLE. BLACK SOLDIER FLY (*HERMETIA ILLUCENS*)

(Adapted from Smetana et al. 2019)

ADULT. 5-9 days. 900 eggs/female



SUSTAINABILITY

Insects are natural decomposers. They are highly efficient in converting a wide range of inputs into high-quality protein	High productive efficiency	Ecological footprint
Valorization of agri-food wastes and by-products	Circular economy	Short productive cycle
Feed conversion efficiency	Less water, soil and GHG emissions than other farm animals to produce 1 kg of protein	

CONCLUSIONS

- Insect meals can partially replace fish meal in aquaculture diets
- Insect meals have a great potential to be included in poultry feed
- Insect production for animal feed is growing exponentially
- Insects are a sustainable protein source for animal feed

REFERENCES

All About Feed. 2017. Update: A-Z of insect protein/oil companies [Internet]. Available in: <https://www.allaboutfeed.net/New-Proteins/Articles/2017/12/A-Z-of-insect-proteinoil-companies-162419E/>
 Smetana S, Schmitt E, Mathys A. 2019. Sustainable use of *Hermetia illucens* insect biomass for feed and food: Attributional and consequential life cycle assessment. *Resour Conserv Recycl.* 144:285–296.
 Photos: Pupa (Project Noah: <https://www.projectnoah.org/organisms>) larva and adult (Wageningen Academic Publishers: <https://e-insects.wageningenacademic.com/>)