

## Climate change affects fungal diseases of the important oil palm crop

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Group: AMG | Line: [Environmental Biotechnology and Bioengineering](#)

Palm oil is a very important commodity used in 40% of supermarket products, cooking, cosmetics, pharmaceuticals and increasingly, biodiesel. Eighty five percent of palm oil is produced in Malaysia and Indonesia. Also, palm oil production impacts the environment negatively and increases greenhouse gases (GHG). The crop is subjected to serious diseases, including those caused by fungi, which increase when oil palm (OP) are grown under sub-optimal conditions. Climate change is predicted to decrease the ability to produce disease-free OP after 30 and especially 80 years in Malaysia and Indonesia [1]. This affects negatively the sustainability of the palm oil industry, and increases pressure on destroying forests to further grow the cash crop. A limited number of areas gained more suitable climates for growing disease-free OP.

The situation was assessed in other OP producing countries in Latin America (*e.g.* Brazil) and Africa (*e.g.* Nigeria) in which OP are increasingly grown [2]. The decrease in suitability was even more severe in many cases, making fungal diseases more likely. These other countries are not a viable alternative to growing in Malaysia and Indonesia. A small number of countries were more suitable (*e.g.* Paraguay) over 30 to 80 years in a predicted movement towards the poles of suitable climate. Interestingly, the decreased ability to grow OP may have an ameliorating effect on climate change, as OP production increases GHG.

In summary, the effects of climate will have profound effects on OP and fungal diseases in the future.

### References

- [1] Paterson, RRM, Kumar, L, Taylor S, Lima, N, Future climate effects on suitability for growth of oil palms in Malaysia and Indonesia. *Scientific Reports* 5, 14457, 2015.
- [2] Paterson, R, Kumar, L, Taylor, S, Lima, N, World climate suitability projections to 2050 and 2100 for growing oil palms. *Journal of Agricultural Science* 155, 689-702, 2017.