**Translational Research in Grain Legumes: Results, Applications and Perspectives**

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Translational research is an opportunity to translate basic discoveries into applications quickly and efficiently. In plants, basic science can indeed be translated into methods and innovations to develop and improve crop varieties and thus achieve food security in a sustainable and safe way. It is therefore important to generalise the application of translational research and make it accessible to a large community of researchers and breeders. Grain legumes, including pea, faba bean and lentil, are an important source of protein for animal and human nutrition. As the demand for plant-based protein continues to grow, more land is being devoted to these crops, but many challenges still limit their productivity. Improving the response of grain legumes to limiting factors is key to ensuring the stability of grain yield quantity and quality. Here, we report on the use of OrthoLegKB, a new knowledge graph database for grain legumes, to query large available genetic, genomic and transcriptomic datasets. We show how relevant biological questions can be addressed and how information from a single species or group of species can be simply transferred to other species. OrthoLegKB is an important step towards translational approaches in grain legumes and a great tool for the legume research and breeding community. Current results related to seed quality and stress resistance will be highlighted and future developments to accommodate new data types will be discussed.

***Reference:***

[1] Imbert B. et al., Development of a knowledge graph framework to ease and empower translational approaches in plant research: a use-case on grain legumes, Front Artif Intell., 6:1191122, 2023. doi: 10.3389/frai.2023.1191122.