

1. Record Nr.	UNINA9910346752203321
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Titolo	Phenomics
Pubbl/distr/stampa	Frontiers Media SA, 2018
Descrizione fisica	1 online resource (222 p.)
Collana	Frontiers Research Topics
Soggetti	Botany & plant sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>"Phenomics" is an emerging area of research whose aspiration is the systematic measurement of the physical, physiological and biochemical traits (the phenome) belonging to a given individual or collection of individuals. Non-destructive or minimally invasive techniques allow repeated measurements across time to follow phenotypes as a function of developmental time. These longitudinal traits promise new insights into the ways in which crops respond to their environment including how they are managed. To maximize the benefit, these approaches should ideally be scalable so that large populations in multiple environments can be sampled repeatedly at reasonable cost. Thus, the development and validation of non-contact sensing technologies remains an area of intensive activity that ranges from Remote Sensing of crops within the landscape to high resolution at the subcellular level. Integration of this potentially highly dimensional data and linking it with variation at the genetic level is an ongoing challenge that promises to release the potential of both established and under-exploited crops.</p>