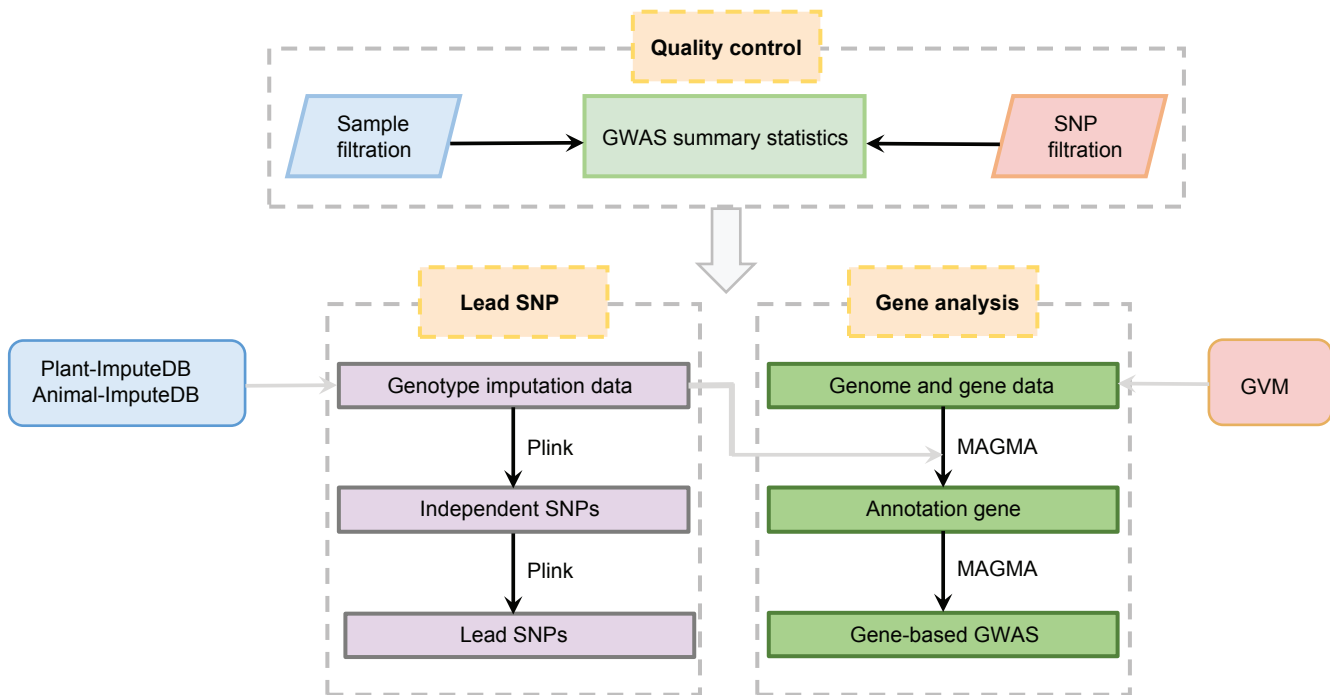


Supplemental Figure S1. Curation models of genotype-to-phenotype associations and causal variants.



Supplemental Figure S2. Comprehensive workflow of lead SNP analysis and gene analysis.

Variant ID	Genomic Location	Traits	P-values	R ² (%)	Genes (Consequence Types)	Lead SNPs	PMID
osa8688999	chr6:1765761	amylose content	2.91E-27	20.49	Os06g0133000 (upstream_gene_variant) Os06g0132600 (upstream_gene_variant) Os06g0132801 (downstream_gene_variant) Os06g0133100 (downstream_gene_variant)	Leader	21915109
osa8688999	chr6:1765761	albumin content	8.6E-16	20.9	Os06g0133000 (upstream_gene_variant) Os06g0132600 (upstream_gene_variant) Os06g0132801 (downstream_gene_variant) Os06g0133100 (downstream_gene_variant)	Leader	29868069
osa8688999	chr6:1765761	amylose content	1.19E-22	-	Os06g0133000 (upstream_gene_variant) Os06g0132600 (upstream_gene_variant) Os06g0132801 (downstream_gene_variant) Os06g0133100 (downstream_gene_variant)	Leader	34408762
osa8688999	chr6:1765761	amylose content	1.0E-11	-	Os06g0133000 (upstream_gene_variant) Os06g0132600 (upstream_gene_variant) Os06g0132801 (downstream_gene_variant) Os06g0133100 (downstream_gene_variant)	Leader	27179918
osa8688999	chr6:1765761	amylose content	7.27E-51	65.3	Os06g0133000 (upstream_gene_variant) Os06g0132600 (upstream_gene_variant) Os06g0132801 (downstream_gene_variant) Os06g0133100 (downstream_gene_variant)	Leader	32886450
osa8688999	chr6:1765761	100-grain weight	1.76E-18	33.62	Os06g0133000 (upstream_gene_variant) Os06g0132600 (upstream_gene_variant) Os06g0132801 (downstream_gene_variant) Os06g0133100 (downstream_gene_variant)	Leader	32886450

Variant ID	Genomic Location	Traits	P-values	R ² (%)	Genes (Consequence Types)	Lead SNPs	PMID
osa8689111	chr6:1768006	protein content	1.02E-12	-	Os06g0133000 (missense_variant) Os06g0133000 (splice_region_variant) Os06g0133100 (downstream_gene_variant)	Leader	32303966
osa8689111	chr6:1768006	amylose content	8.99E-19	-	Os06g0133000 (missense_variant) Os06g0133000 (splice_region_variant) Os06g0133100 (downstream_gene_variant)	Leader	32303966
osa8689111	chr6:1768006	whiteness degree of dead grain	2.76E-11	-	Os06g0133000 (missense_variant) Os06g0133000 (splice_region_variant) Os06g0133100 (downstream_gene_variant)	Leader	32303966
osa8689111	chr6:1768006	whiteness degree of complete grain	4.55E-10	-	Os06g0133000 (missense_variant) Os06g0133000 (splice_region_variant) Os06g0133100 (downstream_gene_variant)	Leader	32303966

Variant ID	Genomic Location	Traits	P-values	R ² (%)	Genes (Consequence Types)	Lead SNPs	PMID
osa8689139	chr6:1768724	breakdown viscosity	2.79E-12	17.0	Os06g0133000 (synonymous_variant) Os06g0133100 (downstream_gene_variant)	Leader	34510797
osa8689139	chr6:1768724	amylose content	6.21E-19	41.0	Os06g0133000 (synonymous_variant) Os06g0133100 (downstream_gene_variant)	Leader	34510797

Supplemental Figure S3. Screenshots for three lead variants in *WX1*.