

All information in this dataset was compiled from publicly available sources, including app store listings, developer websites, and associated promotional and technical materials, as described in the accompanying manuscript. While every entry reflects a good-faith reading of what developers themselves chose to disclose, some variation in how consistently and precisely that information was presented across platforms means occasional miscoding cannot be entirely ruled out. Given the scale of this mapping, applications were not individually downloaded or hands-on tested to verify every coded feature; this dataset should therefore be read as a systematic account of developer-published information, rather than an independently verified technical audit of each application.

Section 1: Special value codes used throughout the dataset

Code	Meaning	Columns where used
NS	Not specified - the developer did not disclose a numeric count for this field	Pest/Disease Number
NA	Not applicable - no AI functionality was ever introduced in this application	Year AI introduced
Unknown	Developer's location could not be determined from public sources	Primary Country
Unknown	Export capability status could not be determined from public materials (distinct from a confirmed absence, coded 0)	Export capability
No	Not applicable - application is fully free, so a subscription price does not apply	Price listed

Section 2: Full variable dictionary

Group	Column	Type	Description
A. General information	App Name	text	Application name as marketed by the developer.
A. General information	Primary Country	categorical	Developer's primary country. "Unknown" where this could not be confirmed (n=1).
A. General information	Other Country	text	Secondary developer country, recorded only where the app is associated with more than one country. Blank for most apps.
A. General information	Continent	categorical	Continent associated with the developer's location; used in the geographic distribution analysis (Section 3.1).
A. General information	Year	numeric	Year the application was first released.
A. General information	Year AI introduced	numeric / "NA"	Year AI functionality was introduced. "NA" = no AI functionality ever introduced.
A. General information	Crops	categorical	App is grapevine-exclusive or covers multi-crop.
A. General information	Platform	categorical	Platform availability (iOS, Android, Web, or combinations).
A. General information	Category	categorical	One of four primary functional categories.
B. Pest/disease coverage	Pest/Disease Number	numeric / "NS"	Overall count of target organisms disclosed. "NS" = not specified by developer. Used in the Spearman correlation, n=39 non-missing.
B. Pest/disease coverage	Organism species disclosed	Yes/No	Whether a named list of species was disclosed (as distinct from an aggregate count only).
C. IPM functional components (0/1)	ID/Diagnosis	0/1	Disease or pest diagnosis and identification.
C. IPM functional components (0/1)	Monitoring	0/1	Field monitoring and scouting.
C. IPM functional components (0/1)	Forecasting	0/1	Disease or pest risk forecasting.
C. IPM functional components (0/1)	Management Options	0/1	Management options and control measures.
C. IPM functional components (0/1)	Intervention Timing	0/1	Intervention timing optimisation.
C. IPM functional components (0/1)	Precision control	0/1	Precision and site-specific management.
C. IPM functional components (0/1)	Recordkeeping	0/1	Recordkeeping and documentation.
C. IPM functional components (0/1)	Surveillance	0/1	Surveillance or regulatory reporting.
C. IPM functional components (0/1)	Alerts	0/1	Communication of alerts, warnings, or information.
C. IPM functional components (0/1)	IPM Score	numeric (0-9)	Sum of the nine binary components above.
D. Computational intelligence	AI	Yes/No	AI-enabled (>=1 of: CV diagnosis, ML forecasting, AI advisory, AI sensor analytics).
D. Computational intelligence	Evidence	Confirmed/Inferred	Whether AI status was confirmed from technical detail, or inferred from functional description/terminology alone.
D. Computational intelligence	Rule-based	0/1	Presence of rule-based logic (independent of AI status; not mutually exclusive).
D. Computational intelligence	Mechanistic/Epidemiological Models	0/1	Presence of mechanistic/epidemiological modelling.
D. Computational intelligence	Weather Models	0/1	Presence of weather-driven forecasting.
D. Computational intelligence	AI CV	0/1	AI type 1: image-based diagnosis / computer vision.
D. Computational intelligence	AI Forecasting/ ML	0/1	AI type 2: ML-based risk forecasting / predictive analytics.
D. Computational intelligence	AI LLM	0/1	AI type 3: advisory or conversational AI.
D. Computational intelligence	AI Sensor Analytics	0/1	AI type 4: AI-driven interpretation of sensor/IoT/trap data. (Types not mutually exclusive.)
E. Data & interoperability	Open API	0/1	Presence of a publicly documented, open/third-party API (even if enterprise).
E. Data & interoperability	Weather API	0/1	Integration of external weather data sources.
E. Data & interoperability	Export capability	0 / 1 / "Unknown"	Data export in a standard format. "Unknown" = status could not be determined; distinct from confirmed absence.
F. Pricing & adoption	Price listed	0 / 1 / "No"	"No" = fully free app, price not applicable. 0 = subscription/freemium, price undisclosed. 1 = price disclosed.
F. Pricing & adoption	Free tier	0/1	Whether any free-tier or freemium access exists, regardless of overall pricing classification.
F. Pricing & adoption	Pricing Model	Free/Subscription	Binary classification: freemium and both subscription tiers collapse into "Subscription."
Sources	Website	URL	Official product/developer website; app store listing used as fallback where no official website exists.

