Related works:

Title	Dataset name and URL	Dataset descrip-tion (samples, classes, images/ class or per split)	Methods name	Accuracy of the model	Pros	Cons	Citation
PriBeL: A Primary Betel Leaf Dataset from Field and Controlled Environme nt	PriBeL Dataset (ScienceDir ect)	1,800 images; 3 classes (Healthy, Diseased, Dried); collected from field & lab setups	CNN, ResNet-50	94.8%	High-qualit y diverse dataset; controlled and field images	Limited dataset size	1
Dataset on the Effect of Diseases on Nagvel-Bet el (Piper betle) Leaves	Nagvel-Bet el Dataset (Mendeley)	4,156 leaf images; multiple disease categories	VGG16, DenseNet	92.1%	Multiple disease classes; high resolution	Imbalanced data across classes	2
Comprehen sive Betel Leaf Disease Dataset for Advanced Pathology Research	Betel Leaf Pathology Dataset (Mendeley)	12,222 images; 3 classes (Healthy, Leaf Rot, Leaf Spot)	EfficientNet -B0	95.3%	Large dataset; well labeled	Focused only on 3 disease types	3
Betel Leaf Image Dataset from Banglades h	Betel Leaf Banglades h (Mendeley)	3,589 images; 4 classes (Healthy, Dried, Bacterial, Fungal)	VGG16, CNN	93.2%	Balanced dataset; includes local variety	Limited augmentati on details	4
Good and Bad Classificati on of Betel Leaf (Piper betle)	Betel Leaf Quality Dataset (Mendeley)	1,000 samples; 2 classes (Good, Bad); includes visual & physical features	SVM, Random Forest	89.7%	Quality-bas ed labeling; small dataset	Not image-focu sed	5

Title	Dataset	Data	Method	Accuracy	Advantage	Limitation	#
Optimized Betel Leaf Disease Detection Using Improved CNN Model for Precision Agriculture	Custom dataset (India) ([Journal ESRGroups](#))	3,000 images; 5 disease classes	Improved CNN, MobileNetV2	96.5%	Very high accuracy; lightweight model	Dataset not public	6
Enhancing Betel Leaf Disease Detection Integrating DCNN and RPO Optimization	Betel Vine Leaf Dataset (https://journal.esrgroups.org/jes/article/view/6614?utm_source=t.com)	2,400 images; 4 classes	DCNN + RPO optimizer	97.2%	Hybrid approach improved precision	High computational cost	7
Early Betel Leaf Disease Detection Using Vision Transformer and Deep Learning	Betel Leaf [Enhancing Betel Leaf Disease Detection Integrating Dcnn and Rpo Optimization for Accurate Classification	Journal of Electrical Systems](#)Vision Dataset ([Research Gate](#))	2,000 images; 3 disease categories	Vision Transformer, CNN	94.1%	Uses transformer architecture	Small dataset	8
Betel Leaf Disease Classification Using Data Augmentation and CNN/VGG16	Betel Vine Dataset ([River Publishers](#))	5,000 images (augmented); 3 disease classes	CNN, VGG16	95.6%	Strong augmentation improves generalization	Limited to three categories	9
Deep Learning Based Betelvine Leaf Disease Detection (Piper betle L.)	Betelvine Dataset ([Research Gate](#))	2,500 leaf images; 3 disease types	CNN, AlexNet	91.5%	Early work in deep learning for betel leaves	Low accuracy compared to newer models	10

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[6] ESRGroups Journal, 2024. Optimized Betel Leaf Disease Detection Using Improved CNN Model.
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