



AI Sugarcane Planting Recommendations

Personalized farming strategy powered by artificial intelligence

Farm Information

FARMER

Badger Analytics

CROP TYPE

Sugar Cane

NATURAL RESOURCE

Llama 25

SOWING DATE

Monday, 01 Dec 2025

AREA TO PLANT

70 ha

IRRIGATION AVAILABLE

Yes

HISTORY OF PESTS/DISEASE

Yes

PAST ISSUES

Smut

Eldana

Brown Rust

Recommendations

Recommendation

Reason

Plant N41 or N36 sugarcane variety for this season.

Both varieties have strong tolerance to regional pest and disease pressures and perform well in moderate to marginal soils. If water or nutrient stress is expected, N36 is more robust but has slightly lower yield potential than N41.

Apply 2.5 tons/ha of agricultural lime before planting.	Soil pH is below optimal (5.5); liming will neutralize acidity and improve NPK availability for root development.
Apply 50 t/ha of compost or organic matter before planting or as basal.	Organic carbon is critically low; restoring organic matter will improve nutrient and water retention, and increase soil microbial activity.
Apply 120 kg N/ha, 60 kg P/ha, and 120 kg K/ha in split doses.	This balanced NPK recommendation addresses major soil fertility gaps. Split applications reduce nutrient loss and maximize sugarcane uptake.
Apply 25% of total NPK as basal at planting, then the remainder at 30 cm and 50 cm cane height.	Split cycles reduce fertilizer losses and improve uptake during peak growth.
Apply zinc (10 kg/ha), boron (2 kg/ha), and magnesium (25 kg/ha) as micronutrient boosters at planting.	Soil is deficient in available micronutrients critical for early cane vigor and yield.
Spray pre-emergence herbicide (e.g., metribuzin 500g/ha) before planting using Badger Analytics Drone Spraying.	Controls initial germination of broadleaf and grass weeds, reducing early competition.
Apply post-emergence herbicide (e.g., glyphosate 2L/ha, shielded spray) at early growth stage if weed resurgence occurs.	Ensures ongoing weed control past emergence in case of residual weed pressure.
Apply contact insecticide (e.g., chlorpyrifos 1.5L/ha) at 30 cm height using Badger Analytics Drone Spraying.	Controls potential stalk borers/Eldana if larval activity or historic risk is present.
Scout for aphids/leafhoppers and apply imidacloprid 250ml/ha if pest appears.	Proactive scouting reduces need for prophylactic sprays; only intervene if pest populations reach threshold.

Crop Management Plan

Fertilizer Plan			
Type	Quantity (kg/ha)	Application Stage	
Lime	2500	before planting	
Compost	50000	before planting	
NPK (2:1:2 or 3:1:6 blend)	120 (N), 60 (P), 120 (K)	25% at planting, 37.5% at 30 cm height, 37.5% at 50 cm height	
Zinc Sulphate	10	at planting	
Boron	2	at planting	
Magnesium Sulphate	25	at planting	
Pesticide Plan			
Name	Targets	Quantity	Cycle

Chlorpyrifos	stalk borer, Eldana	1.5 L/ha	30 cm height
Imidacloprid	aphids, leafhoppers	250 ml/ha	check if pest appears

Herbicide Plan

Name	Targets	Quantity	Cycle
Metribuzin	broadleaf, grass weeds	500 g/ha	before planting
Glyphosate (shielded sprayer)	broadleaf, grass weeds	2 L/ha	early growth stage, check for weed resurgence

Harvest Plan

Expected Yield (t/ha)	85-110
Harvest Window	12-14 months after planting, mid- to late-season window depending on variety

Application Summaries

FERTILIZER SUMMARY

Lime:2500 at before planting | Compost:50000 at before planting | NPK (2:1:2 or 3:1:6 blend):120 (N), 60 (P), 120 (K) at 25% at planting, 37.5% at 30 cm height, 37.5% at 50 cm height | Zinc Sulphate:10 at at planting | Boron:2 at at planting | Magnesium Sulphate:25 at at planting

PESTICIDE SUMMARY

Chlorpyrifos:1.5 L/ha, targets: stalk borer,Eldana, cycle: 30 cm height | Imidacloprid:250 ml/ha, targets: aphids,leafhoppers, cycle: check if pest appears

HERBICIDE SUMMARY

Metribuzin:500 g/ha, targets: broadleaf,grass weeds, cycle: before planting | Glyphosate (shielded sprayer):2 L/ha, targets: broadleaf,grass weeds, cycle: early growth stage, check for weed resurgence

Important Notes

Additional Notes: This is an AI-generated recommendation. Always verify with a soil test before applying any chemicals. The AI is still learning.

Cautions:

- Do not exceed 130 kg N/ha on sandy soils—risk of leaching and crop burn.
- Avoid planting late varieties if sowing after September.
- Ensure all fertilizer applications are split—never apply entire quantity at planting.
- If predicted rainfall is below average, consider reducing N dose by 20%.
- Drone spraying must always comply with legal safety requirements.

Spraying Notes: 12–14 months after planting, mid- to late-season window depending on variety

Production and Environmental Summary

Land Use Plan Recommendation	Better Management Practice	Summary / Notes
Annual production plan	Rotate with legumes/beans after cane harvest. Sequestration of crop residues between ratoon cycles.	Reduces soil-borne disease risk and improves soil fertility.
Threatened, Critical and Protected Species and Ecosystems	Maintain buffer strips along field margins and avoid habitat clearance.	Protects threatened species and meets regulatory requirements.
Alien and Invasive Species	Regularly scout and remove invasive weeds before seed set using manual or herbicide control.	Prevents spread and encroachment of invasive species.
Fire	Implement and maintain firebreaks; never burn cane fields except as regulated pre-harvest.	Reduces wildfire risk and protects infrastructure.
Pollution Control	Ensure all agrochemical applications are via precision drone service (Badger Analytics). Avoid spraying near waterways.	Minimizes drift, leaching and impacts on water.
Transformation of the Natural Environment	Preserve wetlands and natural corridors where feasible.	Ensures long-term biodiversity and legal compliance.
Water Use	Use efficient irrigation scheduling and regular soil moisture monitoring.	Maximizes water use efficiency, reduces losses.
Wetlands & Watercourses	Maintain 30 m buffer zones around wetlands and riverbanks.	Critical to prevent contamination and preserve wetland function.
Irrigation & Drainage	Check and maintain drainage channels before rainy season.	Reduces soil erosion and root waterlogging.
Soil Conservation (general)	No-till planting where feasible; use cover crops.	Reduces soil erosion and improves structure.
Soil Conservation (management)	Monitor for compaction; use deep rip every 2–3 years.	Improves soil tilth and root penetration.

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