



Information Sheet

Variety N12 Zapyr

Introduction

N12 Zapyr is a sugarcane variant that has the same agronomic characteristics as N12, but with the added advantage of being tolerant to the herbicidal compound imazapyr in specific circumstances. It was developed from variety N12 through a process called mutagenic breeding¹.

It is recommended for planting in rainfed regions of the industry on a range of soils and harvesting on a long cutting cycle. Proper handling of N12 Zapyr is essential to prevent unintended damage to the crop.

Current imazapyr application recommendations

Imazapyr (imidazolinone) is a non-selective herbicide used for the control of a broad range of weeds, including grasses, broadleaf weeds, and sedges. It is effective for the control of creeping grasses e.g. Cynodon. Arsenal® GEN 2 (BASF) is the only registered imazapyr product approved for use on sugarcane.

According to the current label instructions, Arsenal® GEN 2 should be applied at a rate of 5.2 L/Ha to actively growing weeds and to the regrowth of the previous sugarcane crop, when they reach a height of approximately 30 - 45 cm, with the intention of killing the weeds and/or the old crop.

Following application, normal sugarcane can only be replanted after the stipulated waiting period of at least 4 months and after a minimum of 600 mm precipitation (preferably rain) during the warmer months of the year. This waiting period and precipitation are necessary because the herbicide exhibits high residual soil activity which can kill newly planted sugarcane. However, if N12 Zapyr is planted into soil treated with imazapyr, it has been shown in trials that it will germinate and grow normally.

New label recommendations regarding N12 Zapyr

A label amendment for Arsenal® GEN 2 is being submitted to the Registrar for approval². Should approval be granted, a key advantage of N12 Zapyr will be that **seedcane stalks** can be planted directly into imazapyr treated soil without observing the waiting period. Germination will not be compromised, and this allows for an initial growing period during which weeds are suppressed. Note that this only applies to N12 Zapyr **seedcane stalks**. N12 Zapyr NovaCane® plantlets or N12 Zapyr single-budded-sett (SBS) transplants remain sensitive and should not be planted without observing the waiting period.

After label amendment, imazapyr can be applied between N12 Zapyr cane rows as an early post-emergent treatment in cane older than 3-months. However, imazapyr should not be applied directly over the sugarcane plant. The spray may extend into the rows below the sugarcane canopy (specific application rate pending).

Best features

High RV yields have been produced on poor soils in the Midlands on a long cutting cycle. While not being the highest yielding variety, N12 is still reliable and has produced consistently under a range of conditions in the industry. It is a hardy variety and very good RV yields were achieved during periods of drought. The ratooning ability of N12 is good, making it economically viable over many seasons. It has fairly good eldana tolerance, thereby allowing it to be carried over. It has good resistance to brown rust. Initial observations are that thrips will cause mild damage in this variety.

Limiting features

Germinates and establishes a canopy fairly slowly, so weed control measures are essential. Not suited to 12 month harvesting. Moderate to low RV yields on humic soils relative to other varieties. Not recommended for frost pockets. Mosaic is becoming increasingly common in this variety. Mild to moderate infestations of tawny rust have occasionally been observed in the Midlands. YLS observed frequently on this variety. Flowering can be profuse in this variety.

Yield & quality

The performance of a variety will vary under different conditions and levels of management. For refined yield and quality information, please consult the SASRI Variety Guide at www.sasri.org.za/varietyguide, where you will be able to rank this variety against others of your choice based on your specific area, irrigation regime, cutting cycle, soil potential and time of harvest.



¹ Mutagenic breeding (also known as mutagenesis) involves the utilisation of physical or chemical mutagens to intentionally induce random mutations to generate a specific trait, within controlled laboratory settings. SASRI has employed chemical mutagenesis to enhance the sugarcane variety N12.

² Pesticides are highly regulated substances and users are bound by the statutes of Act No. 36 of 1947. This means any person advertising, selling, buying, or using a pesticide may only do so according to the label instructions of the pesticide.



Management Factors

EARLY SEASON HARVEST	YES	NO	
MID-SEASON HARVEST	YES	NO	
LATE SEASON HARVEST	YES	NO	
SUITABILITY FOR CARRYOVER	YES	NO	
SUITABILITY FOR FROST POCKETS	YES	NO	UNKNOWN



Soil Potential

LOW POTENTIAL	YES	NO
AVERAGE POTENTIAL	YES	NO
HIGH POTENTIAL	YES	NO



Agronomic Characteristics

GERMINATION ABILITY	FAST	MODERATE	SLOW	
CANOPY DEVELOPMENT	FAST	MODERATE	SLOW	
STALK POPULATION	HIGH	MODERATE	LOW	
STALK HEIGHT	TALL	MODERATE	SHORT	
FLOWERING	SPARSE	MODERATE	PROFUSE	
LODGING	ERECT	AVERAGE	SEVERE	
TOLERANCE TO WATER STRESS	GOOD	MODERATE	POOR	UNKNOWN
TOLERANCE TO WATER LOGGING	GOOD	MODERATE	POOR	UNKNOWN



Response to Ripeners

ETHEPHON (and generics)	HIGHLY RECOMMENDED	RECOMMENDED	NOT RECOMMENDED	UNKNOWN
FUSILADE (and generics)	HIGHLY RECOMMENDED	RECOMMENDED	NOT RECOMMENDED	UNKNOWN
COMBO ETHEPHON + FUSILADE (and generics)	HIGHLY RECOMMENDED	RECOMMENDED	NOT RECOMMENDED	UNKNOWN
MODDUS	HIGHLY RECOMMENDED	RECOMMENDED	NOT RECOMMENDED	UNKNOWN
COMBO MODDUS + FUSILADE (and generics)	HIGHLY RECOMMENDED	RECOMMENDED	NOT RECOMMENDED	UNKNOWN



Reaction to Pests & Diseases

SMUT	HIGHLY RESISTANT	RESISTANT	INTERMEDIATE RESISTANT	INTERMEDIATE	INTERMEDIATE SUSCEPTIBLE	SUSCEPTIBLE	HIGHLY SUSCEPTIBLE	
MOSAIC	HIGHLY RESISTANT	RESISTANT	INTERMEDIATE RESISTANT	INTERMEDIATE	INTERMEDIATE SUSCEPTIBLE	SUSCEPTIBLE	HIGHLY SUSCEPTIBLE	
BROWN RUST	HIGHLY RESISTANT	RESISTANT	INTERMEDIATE RESISTANT	INTERMEDIATE	INTERMEDIATE SUSCEPTIBLE	SUSCEPTIBLE	HIGHLY SUSCEPTIBLE	UNKNOWN
TAWNY RUST	HIGHLY RESISTANT	RESISTANT	INTERMEDIATE RESISTANT	INTERMEDIATE	INTERMEDIATE SUSCEPTIBLE	SUSCEPTIBLE	HIGHLY SUSCEPTIBLE	UNKNOWN
ELDANA	HIGHLY RESISTANT	RESISTANT	INTERMEDIATE RESISTANT	INTERMEDIATE	INTERMEDIATE SUSCEPTIBLE	SUSCEPTIBLE	HIGHLY SUSCEPTIBLE	
THRIPS LEAF DAMAGE	LESS	MODERATE	MORE	UNKNOWN				
YSA LEAF DAMAGE	LESS	MODERATE	MORE	UNKNOWN				



Milling Characteristics

FIBRE CONTENT	VERY LOW	LOW	LOW TO MOD	MODERATE	MOD TO HIGH	HIGH	VERY HIGH
COLOUR	VERY LOW	LOW	ACCEPTABLE	HIGH	VERY HIGH		
PROCESSABILITY	VERY GOOD	GOOD	ACCEPTABLE	POOR	VERY POOR	UNKNOWN	

N12 Zapyr Identification Guide

Habit and General Appearance

Early growth is prostrate, becoming erect later. Good resistance to lodging and canopy is erect. Leaves are quick to respond to conditions of moisture stress, by an inward rolling of the leaf blade.

Leaf

Blade: Leaves of N12 Zapyr could range from narrow to medium without chlorotic blotch, whereas N12 leaves are mostly narrow with chlorotic blotch.

Sheath: Hairs on the back of the leaf sheath usually absent; sometimes a few present. Has a distinct purplish tinge visible through the overlying wax coating.

Collar: Medium width, with distinct green colour. A prominent fringe of hairs is associated with the collar region.

Auricle: Usually present, well developed and lance-shaped.

Stalk

Internode

Appearance: Medium thickness and relatively hard. Yellow-green in colour. On exposure green flushes develop. Cylindrical in shape and staggered. Generally no cracks, although corky markings (patches) may be present.

Wax band: Narrow, constricted and usually distinct.

Bud furrow: Slight bud furrow is present in younger internodes in N12 Zapyr (this is typical, so could be used as a phenotypic marker to identify the variety in the field by our Biosecurity/Extension Specialists).

Node

Growth ring: Green in young nodes, becoming yellow in older nodes.

Root band: Medium width, creamy white in colour. Root primordia generally present in two to three rows.

Sheath scar: A ragged scar which may protrude and sag slightly below the bud.

Bud: Usually oval, occasionally circular, arising above the sheath scar. The young, immature buds are a characteristic pink or red-pink colour.

Flange: Narrow to medium width, arising at or below the centre of the bud.



October 2024

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