PIONEER® BRAND

11B91 CRIMPED GRAIN MAIZE INOCULANT

RAPID REACT® AEROBIC STABILITY

PIONEER®

Pioneer® brand 11B91 is a crimped grain maize inoculant with next-generation *Lactobacillus buchneri* designed for:

- Non-hazardous biological solution to aerobic stability problems, avoiding the use of expensive, caustic acid products
- Improving fermentation, retaining nutrient content and enhancing digestibility of ensiled crimped maize
- Use on crimped grain maize and ground ear maize harvested for ensiling
- Available as a water-soluble product in packaging suitable for use in tank mixes or with the Pioneer Appli-Pro® systems for easy and convenient application.

11B91 contains a unique blend of patented and/or proprietary strains of *Lactobacillus buchneri* and *Lactobacillus plantarum* formulated to:

- Help crimped maize grain stay fresher and cooler in the storage structure and the clamp
- Improve aerobic stability in slow-fill or slow-feedout situations
- Preserve nutritional quality by reducing nutrient losses to spoilage and heat-causing organisms.

Includes Rapid React® aerobic stability technology. This provides more enduring aerobic stability and aerobically stable feed as soon as seven days after ensiling.*

Available in Package Sizes: 	
X	**Improves fermentation and reduces dry matter loss**
X	**Improves nutrient preservation**
X	**Significantly reduces heating at the silage face**
X	**Helps reduce heating in entire Total Mix Ration (TMR)**
	Improves fibre digestibility

IMPORTANT: Information and ratings are based on relative comparisons with other Pioneer® brand inoculants within each specific crop, not competitive products. Information and ratings are assigned by Pioneer Forage Additive Research, based on average performance across area of use under normal conditions, over a wide range of both environment and management conditions, and may not predict future results. Product responses are variable and subject to any number of environmental and management conditions. Please use this information as only part of your product positioning decision. Contact a Pioneer sales professional for the latest and most complete listing of traits and scores for each Pioneer® brand product. Fermentation – rate and extent of pH decline and the composition of fermentation acids occurring in silage. Aerobic Stability – relative heat development compared to ambient temperature. Aerobic Stability considers both how quickly silage begins to heat and the amount of heat generated while remaining above ambient temperature. Fibre Digestibility – the digestibility of neutral detergent fibre (NDF) by the ruminant animal expressed as a percentage of the total NDF.

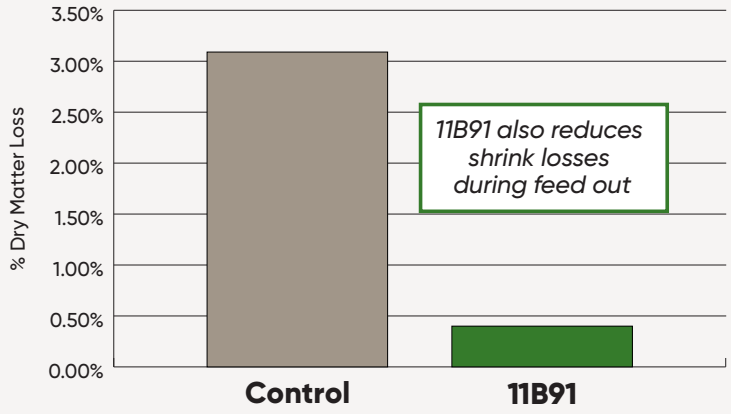
*Disclosure: Improved aerobic stability and reduced heating is relative to untreated silage. Actual results may vary. The effect of any silage inoculant is dependent upon management at harvest, storage and feedout. Factors such as moisture, maturity, chop length and compaction will determine inoculant efficacy.

pH and Aerobic Stability Trials

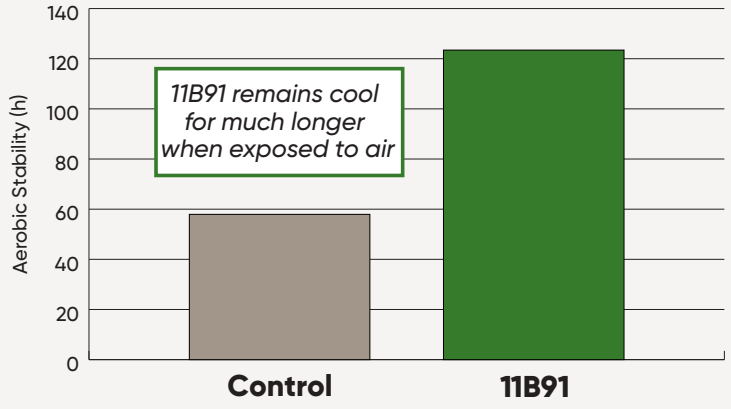
Inoculated and Untreated Crimped Maize Grain

Item[1,2]	Control	11B91
DM, %	73.94[b]	73.53[a]
pH	4.01	4.05
DM recovery, %	97.53[a]	98.09[b]
Aerobic stability, hours	57.75[a]	123.25[b]
DM loss, %	3.08%[b]	0.39%[a]

Shrink Loss in Crimped Maize Grain



Treatment Effects on Aerobic Stability When Subjected to Air



Source: Pioneer Livestock Nutrition Center, Iowa. Summary of two trials. Dry matter recovery, aerobic stability, and nutrient composition were determined for uninoculated (Control) maize silage and for maize silage inoculated with Pioneer® brand 11B91 Maize Silage Inoculant.

[1] All values are expressed as least squares means
[2] Dry matter loss as measured during the aerobic stability test.
[a,b] Treatment means in same row without a common superscript letter differ (P < .05).

Plant Grow Harvest Store Feed The Silage Zone®

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Pioneer® Brand Inoculants

Pioneer proprietary silage inoculants continue to provide those striving to make high quality silage with unique products that reduce silage dry matter losses and improve silage quality.

Mode of Actions	Product	Forage	Purpose
Unique Fibre Technology	**11GFT**	Grass and wholecrop cereal silages	Fermentation, animal performance and fibre digestibility, aerobic stability
	11CFT	Maize silage	Fermentation, animal performance and fibre digestibility, aerobic stability
	11AFT	Lucerne silage	Fermentation, animal performance and fibre digestibility, aerobic stability
	11CH4	A wide range of high dry matter silages	Aerobic stability and gas production
Traditional Technology with Rapid React	PIONEER® **11G22** RAPID REACT® AEROBIC STABILITY	High dry matter grass, wholecrop cereal and pea/cereal silages	Fermentation, animal performance and aerobic stability
	PIONEER® **11C33** RAPID REACT® AEROBIC STABILITY	Maize silage	Fermentation, animal performance and aerobic stability
	PIONEER® **11B91** RAPID REACT® AEROBIC STABILITY	Crimped maize grain	Fermentation, animal performance and aerobic stability
	PIONEER® **1188**	Grass silage below 30% dry matter	Fermentation and animal performance
	PIONEER® **11A44**	A wide range of high dry matter silages	Aerobic stability

The Silage Zone®: Plant, Grow, Harvest, Store, Feed

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