

**EXTERNAL SURFACE SMOOTH TO SLIGHTLY ROUGH, INTERNAL GROUP HAIRS I TO II
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
	Density	Glauc.	Gp.	- Length - Tip shape	Curvature	- Width - Shape		
CRUSOE	M	A	II ⁺	Medium to short Medium	Slight	Medium to wide Elevated	Long Moderate Medium to weak	AR segment convex hairs moderate Uppermost node hairs moderate
ISTABRAQ	M	M	I ⁺ to II sp	Medium to long Medium	Moderate to strong	Narrow to medium Square to slightly elevated	Medium to long Slight to moderate Weak	AR segment convex hairs sparse Uppermost node hairs sparse to moderate
TWISTER	L to M	M	II	Medium Sharp	Moderate	Medium Elevated	Medium to long Strong Weak	AR segment convex hairs sparse Uppermost node hairs moderate to sparse
VISCOUNT	M	M	I	Medium Medium	Moderate	Medium Elevated	Long Moderate Weak	AR segment convex hairs moderate. Uppermost node hairs sparse

**EXTERNAL SURFACE SMOOTH TO SLIGHTLY ROUGH, INTERNAL GROUP HAIRS III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
	Density	Glauc.	Gp.	- Length - Tip shape	Curvature	- Width - Shape		
REFLECTION	M	M to S	III	Medium Medium	Moderate	Medium Elevated	Medium Moderate to strong Medium	AR segment convex hairs absent to very sparse Uppermost node hairs moderate

**EXTERNAL SURFACE ROUGH, INTERNAL GROUP HAIRS I TO II
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
COSTELLO	M	M to S	I ⁺ to II sp	Short Medium	Strong	Narrow Elevated	Medium Strong Weak	AR segment convex hairs sparse Uppermost node hairs sparse
GRAFTON	M to D	S	II	Medium to short Sharp	Moderate	Medium to wide Square	Medium to long Moderate Weak	AR segment convex hairs numerous Uppermost node hairs absent to sparse
KWS TRINITY	L to M	S	I ⁺ to II sp	Medium Medium	Strong	Medium Elevated	Short to medium Moderate to strong Strong	AR segment convex hairs sparse Uppermost node hairs sparse
RGT ILLUSTRIOUS (new 2017)	M	M to S	II ⁺	Medium Medium	Slight to moderate	Medium to narrow Elevated	Medium to long Strong Medium	AR segment convex hairs moderate to numerous Uppermost node hairs sparse
KWS SISKIN (new 2017)	M	S	I	Short to medium Medium	Moderate	Narrow Elevated	Medium Moderate Medium	AR segment convex hairs absent to very sparse Uppermost node hairs moderate
JB DIEGO	M	M	I	Short Sharp	Moderate	Medium to wide Square to slightly elevated	Medium to short Moderate Medium	AR segment convex hairs moderate to numerous Uppermost node hairs numerous
EVOLUTION	M	M to S	I ⁺	Medium Medium	Strong	Medium to wide Elevated	Medium Strong to geniculate Medium	AR segment convex hairs sparse Uppermost node hairs numerous

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STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
LEEDS	M	M	II	Medium Sharp	Moderate	Medium to narrow Elevated	Medium Moderate to strong Medium	AR segment convex hairs sparse Uppermost node hairs sparse to moderate
REVELATION	M	S to M	II	Medium Sharp	Moderate	Medium to narrow Elevated	Medium Moderate to slight Weak	AR segment convex hairs moderate Uppermost node hairs moderate
KWS SANTIAGO	L to M	M	II	Medium to long Sharp	Moderate to strong	Medium Elevated	Medium Strong Weak to medium	AR segment convex hairs moderate Uppermost node hairs numerous
RGT CONVERSION	M	W to M	II	Long Sharp	Strong	Narrow Elevated	Long Moderate to strong Medium to strong	AR segment convex hairs sparse Uppermost node hairs numerous

**EXTERNAL SURFACE ROUGH, INTERNAL GROUP HAIRS II TO III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
BELGRADE (new 2017)	M to D	M	III	Medium Sharp	Moderate	Narrow Elevated	Medium to long Moderate Absent	AR segment hairs moderate Uppermost node hairs numerous

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIRS I TO II
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
CORDIALE	M to D	M to S	I	Medium	Moderate	Medium	Medium Straight to slight	AR segment convex hairs sparse Uppermost node hairs sparse to moderate
GRAHAM (new 2017)	M to D	S	I	Short Medium	Slight	Medium to narrow Elevated	Short Slight Weak	AR segment convex hairs sparse Uppermost node hairs sparse to moderate
RIBAND	L to M	M to W	I to I ⁺	Medium Sharp	Slight to moderate	Medium ± Square to slightly elevated	Medium Moderate Medium	AR segment convex hairs sparse to moderate Uppermost node hairs sparse to moderate

**BEARDED, EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIRS III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
SKYFALL	M	S	III	Very long Sharp	Slight	Very narrow to narrow Elevated (occ with 2nd point)	Very long Straight to slight Absent	AR segment convex hairs sparse to moderate Uppermost node hairs numerous

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR II to III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
DICKENS (new 2017)	M to D	S to M	III	Medium to short Blunt	Slight to moderate	Medium to narrow Elevated	Medium Moderate Weak	AR segment convex hairs moderate Uppermost node hairs sparse
MONROE (new 2017)	D	M to S	II	Medium Medium	Slight	Medium to narrow Elevated	Medium Slight Weak	AR segment convex hairs moderate Uppermost node hairs very sparse to sparse
RELAY	M	S	II	Medium Sharp	Straight to slight	Narrow Elevated	Long Slight Absent	AR segment convex hairs numerous Uppermost node hairs sparse to moderate

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR II to III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
KWS KILBURN (Spring)	VL to L	S to M	III	Medium	Slight	Narrow	Long to very long Slight Absent to weak	AR segment convex hairs moderate to sparse Uppermost node hairs sparse
PARAGON (Spring)	M to L	M	II ⁺ to III	Medium to short Blunt	Straight	Narrow Square to slightly sloping	Medium to short Slight Absent	AR segment convex hairs numerous Uppermost node hairs sparse
RGT DOUBLESOT (Spring) (new 2017)	L to M	M to S	III	Short Blunt	Slight	Wide Square	Long Slight to moderate Medium to strong	AR segment convex hairs moderate to numerous Uppermost node hairs absent or very sparse

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR II to III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
KWS LILI	D	M to S	II	Short to medium Medium	Slight	Narrow Elevated	Medium Slight to moderate Absent to very weak	AR segment convex hairs sparse Uppermost node hairs moderate
BELEPI	M	S to VS	III	Short to medium	Straight to slight	Medium Square	Medium Slight to moderate Weak	AR segment convex hairs sparse Uppermost node hairs numerous
ZULU	M	M	III	Medium Medium	Slight	Medium to narrow Elevated	Medium Slight Weak	AR segment convex hairs moderate Uppermost node hairs numerous

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR II to III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
HORATIO	L to M	M to S	II	Medium to long Sharp	Moderate	Medium Elevated	Long Moderate Medium	AR segment convex hairs moderate Uppermost node hairs moderate
MYRIAD	M	M to S	II sp	Medium Sharp	Moderate to strong	Medium to wide Elevated	Medium to long Strong Strong	AR segment convex hairs sparse Uppermost node hairs numerous to moderate

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR II to III
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
KWS WILLOW (Spring)	L to M	S	III	Very short to short Medium	Moderate	Narrow Square to slightly sloping	Short Moderate to strong Weak	AR segment convex hairs moderate Uppermost node hairs moderate to numerous

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR III
STRAW WALL INTERMEDIATE to THICK**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)			LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES	
	Density	Glauc.	Internal Hairs	Beak				Shoulder
			Gp.	- Length - Tip shape	Curvature			- Width - Shape
GRANARY (Spring)	M	W	III	Short Blunt	Slight	Narrow Square to rounded	Medium Slight Absent	AR segment convex hairs numerous Uppermost node hairs moderate to sparse Straw wall thick
MULIKA (Spring)	L to M	W to M	III	Short to medium Blunt	Moderate to strong	Narrow to medium Elevated	Medium Strong Medium	AR segment convex hairs numerous Uppermost node hairs sparse Straw wall intermediate

**EXTERNAL SURFACE SMOOTH, INTERNAL GROUP HAIR III
STRAW WALL INTERMEDIATE to THICK**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
KWS ALDERON (Spring)	L	S	III	Short Blunt	Slight to moderate	Narrow Square to slightly elevated	Medium Slight Medium	AR segment convex hairs numerous Uppermost node hairs moderate Straw wall intermediate
TYBALT (Spring)	M	M to S	III	Medium to short Blunt	Slight	Medium to narrow Slightly sloping to square	Medium to short Straight to slight Weak	AR segment convex hairs sparse Uppermost node hairs moderate Straw wall thick

WHEAT KEY ABBREVIATIONS

A	Absent
Alt	Alternative
AR	Apical Rachis
D	Dense
L	Lax
M	Medium
Occ.	Occasional
S	Strong
sp	Sparse
V	Very
W	Weak