

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
			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 Scurs long
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 Scurs medium to long
VISCOUNT	M	M	I	Medium Medium	Moderate	Medium Elevated	Long Moderate Weak	AR segment convex hairs moderate Uppermost node hairs sparse Scurs long

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
DUNSTON (new 2018)	M	M	III	Short to medium Blunt	Moderate to slight	Narrow Elevated	Medium Slight to moderate Weak	AR segment convex hairs moderate Uppermost node hairs sparse Scurs long
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 Scurs long

**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	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder	- Length - Curvature - Swelling	
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
COSTELLO	M	M to S	I ¹ to II sp	Short Medium	Strong	Narrow Elevated	Medium Strong Weak	AR segment convex hairs sparse Uppermost node hairs sparse Scurs short
EVOLUTION	M	M to S	I ¹	Medium Medium	Strong	Medium to wide Elevated	Medium Strong to geniculate Medium	AR segment convex hairs sparse Uppermost node hairs numerous Scurs long to very long
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 Scurs short
KWS SISKIN	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 Scurs medium

**EXTERNAL SURFACE SLIGHTLY ROUGH, INTERNAL GROUP HAIRS 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		
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 Scurs medium

**EXTERNAL SURFACE 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		
KWS ZYATT (new 2018)	L	S	III	Short Blunt	Slight	Narrow Elevated	Medium to long Slight to moderate Weak	AR segment convex hairs moderate Uppermost node hairs sparse Scurs long

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
				Gp.	- Length - Tip shape			
LEEDS	M	M	II	Medium	Moderate	Medium to narrow	Medium Moderate to strong	AR segment convex hairs sparse Uppermost node hairs sparse to moderate Scurs medium
REVELATION	M	S to M	II	Sharp Medium Sharp	Moderate	Elevated Medium to narrow Elevated	Medium Moderate to slight Weak	AR segment convex hairs moderate Uppermost node hairs moderate Scurs short

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
				Gp.	- Length - Tip shape			
BELGRADE	M to D	M	III	Medium Sharp	Moderate	Narrow Elevated	Medium to long Moderate Absent	AR segment hairs moderate Uppermost node hairs numerous EXTERNAL HAIRS PRESENT ON GLUMES
RGT WESTMINSTER (new 2018)	M to D	M	II	Medium Medium	Moderate	Medium Elevated	Medium Moderate Weak	AR segment hairs sparse to moderate Uppermost node hairs moderate to numerous Scurs medium to long

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
				Gp.	- Length - Tip shape			
CORDIALE	M to D	M to S	I	Medium Medium	Moderate	Medium Square to slightly elevated	Medium Straight to slight Absent	AR segment convex hairs sparse Uppermost node hairs sparse to moderate Scurs medium
GRAHAM	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 Scurs short

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
				Gp.	- Length - Tip 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
STRAW WALL THIN**

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder	- Length	
			Gp.	- Length - Tip shape	Curvature	- Width - Shape	- Curvature - Swelling	
MONROE	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 Scurs long
KWS LLI	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 Scurs medium
HARDWICKE (new 2018)	M to D	W to M	II	Medium Medium	Slight to moderate	Medium Elevated	Short to medium Moderate Weak	AR segment convex hairs numerous Uppermost node hairs sparse Scurs medium to long

**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	OTHER FEATURES	
	Density	Glauc.	Internal Hairs	Beak		Shoulder		BEAK - Length
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		- Curvature - Swelling
DICKENS	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 Scurs short
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 Scurs long
KWS KERRIN (new 2018)	M	W to M	II*	Medium Medium	Moderate	Medium Square to slightly elevated	Short to medium Strong Medium	AR segment convex hairs moderate Uppermost node hairs sparse Scurs medium
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 Scurs long

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

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder	BEAK - Length - Curvature - Swelling	
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
BELEPI	M	S to VS	III	Short to medium 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 Scurs long
KWS COCHISE (Spring) (new 2018)	L	S	III	Medium Medium	Slight	Narrow to medium Elevated	Long to very long Slight Medium	AR segment convex hairs numerous Uppermost node hairs numerous Scurs very long
KWS KILBURN (Spring)	VL to L	S to M	III	Medium Medium	Slight	Narrow Elevated	Long to very long Slight Absent to weak	AR segment convex hairs moderate to sparse Uppermost node hairs sparse Scurs very long

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

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder	- Length	
			Gp.	- Length - Tip shape	Curvature	- Width - Shape	- Curvature - Swelling	
BENNINGTON (new 2018)	L to M	M	III	Short to medium Medium	Moderate	Narrow to medium Elevated	Medium Moderate Absent	AR segment convex hairs moderate to numerous Uppermost node hairs absent or very sparse Scurs long
LG MOTOWN (new 2018)	M to D	S	III	Short to medium Medium	Strong	Medium Elevated	Medium to short Strong Weak to medium	AR segment convex hairs sparse Uppermost node hairs absent Scurs medium
KWS CHILHAM (Spring) (new 2018)	L	S	III	Short Blunt	Moderate	Narrow Elevated	Medium Moderate to strong Strong	AR segment convex hairs numerous Uppermost node hairs moderate to numerous Scurs long
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 Scurs medium

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

VARIETY NAME	EAR		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA	OTHER FEATURES
	Density	Glauc.	Internal Hairs	Beak		Shoulder	BEAK - Length - Curvature - Swelling	
			Gp.	- Length - Tip shape	Curvature	- Width - Shape		
KWS BARREL (new 2018)	M	M to S	III	Medium to long Sharp	Moderate to strong	Medium Elevated	Medium Moderate to strong Weak to medium	AR segment convex hairs moderate Uppermost node hairs sparse Scurs medium
LG SUNDANCE (new 2018)	D	M	III	Medium to long Medium	Moderate	Narrow to medium Square to slightly elevated	Medium to long Moderate Weak	AR segment convex hairs moderate to numerous Uppermost node hairs absent or very sparse Scurs long
SHABRAS (new 2018)	M	S	III	Medium Medium	Moderate	Medium Elevated with 2 nd point present	Medium Moderate Medium	AR segment convex hairs sparse to moderate Uppermost node hairs absent Scurs very long

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

VARIETY NAME	EAR Density Glauc.		LOWER GLUME (spikelets from mid 1/3 ear)				LOWER LEMMA BEAK - Length - Curvature - Swelling	OTHER FEATURES
			Internal Hairs	Beak		Shoulder		
				Gp.	- Length - Tip shape			
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
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