

Post-rainy Season Cultivars and Hybrid Parents

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Abstract This chapter entitled “Post-rainy season cultivars and hybrid parents” gives a focussed description of improved sweet sorghum varieties/restorers, hybrids and female hybrid parents (as per PPVFRA). The coloured picture of the line is provided for easy identification. The genetic variability for all the metric traits is conspicuous. However, some of the qualitative traits like anthocyanin coloration, glume color the differences between the lines are indistinct or trivial. Among the biochemical traits such as sucrose, glucose and fructose, the differences are noteworthy among the cultivars. The poor productivity of tropical sorghums during post-rainy season is attributed to photo-thermo sensitivity.

Keywords Hybrids · Varieties, Female hybrid parents, Pedigree · Post-rainy · Rabi · Quantitative traits · Biomass · Panicle · Grain · Glucose · Fructose · Sucrose · Brix % · Shoot fly

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1 ICSV 700 Salient Features



1. Pedigree: (IS 1082 × SC 108-3)-1-1-1-1
2. Days to 50 % flowering: 81 days
3. Plant height (m): 2.0
4. Plant girth (mm): 13.2
5. Biomass yield (t ha⁻¹): 24.7
6. Juice yield (t ha⁻¹): 6.9
7. Juice extraction (%): 27.7
8. Brix (%): 13.0
9. Sugar yield (t ha⁻¹): 0.7
10. Grain yield (t ha⁻¹): 2.6
11. Sucrose (%): 4.9
12. Glucose (%): 1.7
13. Fructose (%): 1.0
14. pH of juice: 5.3
15. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 11.3
16. Tolerance to: Stem borer, Shoot fly, Rust.
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		√								Purple
Leaf sheath: anthocyanin colouration			√							Purple
Leaf: midrib colour (5th fully developed leaf)		√								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)								√		81
Plant: natural height of foliage up to base of flag leaf					√					1.8 m
Flag leaf: extension of discoloration of midrib	√									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		√								Same color
Flag leaf: yellow coloration of midrib	√									Absent
Glume hair color	√									Absent
Lemma: arista formation (awns)								√		Strong
Stigma: anthocyanin coloration	√									Absent
Stigma: yellow coloration					√					Medium
Stigma length (mm)					√					Medium
Flower with pedicel: length of flower					√					Medium
Anther: length					√					Medium
Anther: colour of dry anther				√						Orange
Glume: color					√					Red
Plant: total height								√		2.0 m
Stem: diameter (at lower one-third height of plant) (mm)		√								13.2
Leaf: length of blade of the third leaf from top including flag leaf (cm)					√					54.3
Leaf: width of blade of the third leaf from top including flag leaf (cm)								√		6.9
Panicle: length without peduncle			√							16.6
Panicle: length of branches (middle third of panicle)					√					6.4
Panicle: density at maturity (ear head compactness)								√		Semi compact
Panicle: shape			√							Symmetric
Neck of panicle: visible length above sheath (cm)			√							9.8
Glume coverage (%)					√					67
Shattering			√							Low
Threshability					√					Partly threshable
Grain form	√									Single
Caryopsis: colour after threshing	√									White
Grain: weight of 1000 grains (g)					√					30.0
Grain: shape in dorsal view			√							Circular
Grain: shape in profile view			√							Circular
Grain: size of mark of germ								√		Large
Grain: texture of endosperm (in longitudinal section)					√					50 % corneous
Grain: colour of vitreous albumen			√							Yellow
Grain: lustre					√					Medium
Seedling vigor score	√									Most vigorous
Leaf glossy score	√									Glossy
Plant aspect score			√							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

2 ICSV 25279 Salient Features



1. Pedigree: (ICSV 93046 × SSV 84)-7-2-1-2
2. Days to 50 % flowering: 83 days
3. Plant height (m): 2.0
4. Plant girth (mm): 15.4
5. Biomass yield (t ha^{-1}): 25.8
6. Juice yield (t ha^{-1}): 9.1
7. Juice extraction (%): 35.1
8. Brix (%): 16
9. Sugar yield (t ha^{-1}): 1.1
10. Grain yield (t ha^{-1}): 3.5
11. Sucrose (%): 7.4
12. Glucose (%): 1.8
13. Fructose (%): 1.2
14. pH of juice: 5.3
15. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 12.9
16. Tolerance to: Anthracnose
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)								✓		83
Plant: natural height of foliage up to base of flag leaf						✓				1.8 m
Flag leaf: extension of discoloration of midrib					✓					Medium
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)									✓	Strong
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration						✓				Medium
Stigma length (mm)						✓				Medium
Flower with pedicel: length of flower						✓				Medium
Anther: length			✓							Short
Anther: colour of dry anther				✓						Orange
Glume: color						✓				Red
Plant: total height								✓		2.0
Stem: diameter (at lower one-third height of plant) (mm)			✓							15.4
Leaf: length of blade of the third leaf from top including flag leaf (cm)								✓		65
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		7.8
Panicle: length without peduncle									✓	16.2
Panicle: length of branches (middle third of panicle)						✓				5.7
Panicle: density at maturity (ear head compactness)								✓		Semi compact
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)						✓				11.4
Glume coverage (%)			✓							48
Shattering			✓							Low
Threshability						✓				Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing					✓					Yellow
Grain: weight of 1000 grains (g)						✓				33.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ								✓		Large
Grain: texture of endosperm (in longitudinal section)								✓		25 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre	✓									Non-lustrous
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score					✓					Below average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

3 ICSV 25284 Salient Features



1. Pedigree: (DSV 4 × SSV 84)-2-5-1-1
2. Days to 50 % flowering: 67 days
3. Plant height (m): 1.8
4. Plant girth (mm): 14.1
5. Biomass yield (t ha⁻¹): 29.7
6. Juice yield (t ha⁻¹): 7.7
7. Juice extraction (%): 25.7
8. Brix (%): 14
9. Sugar yield (t ha⁻¹): 0.8
10. Grain yield (t ha⁻¹): 2.7
11. Sucrose (%): 6.9
12. Glucose (%): 1.3
13. Fructose (%): 1.7
14. pH of juice: 5.3
15. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 14.9
16. Tolerance to: Aphids.
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)					✓					72
Plant: natural height of foliage up to base of flag leaf					✓					1.6 m
Flag leaf: extension of discoloration of midrib					✓					Medium
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower			✓							Medium
Anther: length					✓					Medium
Anther: colour of dry anther				✓						Orange
Glume: color								✓		Black
Plant: total height					✓					1.8 m
Stem: diameter (at lower one-third height of plant) (mm)		✓								14.1
Leaf: length of blade of the third leaf from top including flag leaf (cm)							✓			68.8
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		8.7
Panicle: length without peduncle			✓							19.1
Panicle: length of branches (middle third of panicle)					✓					6.8
Panicle: density at maturity (ear head compactness)					✓					Semi loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)			✓							12.2
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing	✓									White
Grain: weight of 1000 grains (g)							✓			41.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ							✓			Large
Grain: texture of endosperm (in longitudinal section)					✓					50 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre					✓					Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score				✓						Below average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

4 ICSV 93046 Salient Features



1. Pedigree: [((IS 1082 × SC 108 -3)-1-1-1-1-1) x (((IS 5622 × CS 3541)-20-1-1-1-1-1 x (UChV2 × Bulk Y-55)-1-5-1)]-9-3-1-1-1
2. Days to 50 % flowering: 83 days
3. Plant height (m): 2.0
4. Plant girth (mm): 15.3
5. Biomass yield (t ha⁻¹): 33.9
6. Juice yield (t ha⁻¹): 11.2
7. Juice extraction (%): 32.9
8. Brix (%): 16
9. Sugar yield (t ha⁻¹): 1.3
10. Grain yield (t ha⁻¹): 3.1
11. Sucrose (%): 5.6
12. Glucose (%): 1.0
13. Fructose (%): 1.7
- 14 pH of juice: 5.3
15. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 10.5
16. Tolerance to: Shoot fly, Anthracnose, Grain mold and Downy mildew.
17. Adaptation: Rainy season/Post-rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		√								Purple
Leaf sheath: anthocyanin colouration			√							Purple
Leaf: midrib colour (5th fully developed leaf)		√								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)								√		83
Plant: natural height of foliage up to base of flag leaf					√					1.9 m
Flag leaf: extension of discoloration of midrib	√									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		√								Same color
Flag leaf: yellow coloration of midrib	√									Absent
Glume hair color	√									Absent
Lemma: arista formation (awns)								√		Strong
Stigma: anthocyanin coloration	√									Absent
Stigma: yellow coloration					√					Medium
Stigma length (mm)					√					Medium
Flower with pedicel: length of flower			√							Short
Anther: length			√							Short
Anther: colour of dry anther				√						Orange
Glume: color	√									Straw
Plant: total height								√		2.0 m
Stem: diameter (at lower one-third height of plant) (mm)			√							15.3
Leaf: length of blade of the third leaf from top including flag leaf (cm)					√					52.6
Leaf: width of blade of the third leaf from top including flag leaf (cm)								√		7
Panicle: length without peduncle			√							15.1
Panicle: length of branches (middle third of panicle)					√					6.4
Panicle: density at maturity (ear head compactness)								√		Semi compact
Panicle: shape			√							Symmetric
Neck of panicle: visible length above sheath (cm)					√					10.3
Glume coverage (%)			√							42
Shattering			√							Low
Threshability					√					Partly threshable
Grain form	√									Single
Caryopsis: colour after threshing	√									White
Grain: weight of 1000 grains (g)					√					33.0
Grain: shape in dorsal view			√							Circular
Grain: shape in profile view			√							Circular
Grain: size of mark of germ					√					Medium
Grain: texture of endosperm (in longitudinal section)								√		25 % corneous
Grain: colour of vitreous albumen			√							Yellow
Grain: lustre					√					Medium
Seedling vigor score	√									Most vigorous
Leaf glossy score	√									Glossy
Plant aspect score			√							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

5 SSV 74 Salient Features



1. Pedigree: Selection from PAB 74 (Sudan; Bred by UAS, Dharwad)
2. Days to 50 % flowering: 73 days
3. Plant height (m): 1.7
4. Plant girth (mm): 12.8
5. Biomass yield (t ha⁻¹): 23.2
6. Juice yield (t ha⁻¹): 8.4
7. Juice extraction (%): 36
8. Brix (%): 13
9. Sugar yield (t ha⁻¹): 0.8
10. Grain yield (t ha⁻¹): 2.7
11. Sucrose (%): 5.1
12. Glucose (%): 1.5
13. Fructose (%): 1.1
14. pH of juice: 5.2
15. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 12.9
16. Tolerance to: Aphids, Rust.
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile			✓							Purple
Leaf sheath: anthocyanin colouration	✓									Tan
Leaf: midrib colour (5th fully developed leaf)			✓							Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)						✓				73
Plant: natural height of foliage up to base of flag leaf					✓					1.5 m
Flag leaf: extension of discoloration of midrib	✓									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade			✓							Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration						✓				Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower						✓				Medium
Anther: length						✓				Medium
Anther: colour of dry anther					✓					Orange
Glume: color									✓	Black
Plant: total height						✓				1.7 m
Stem: diameter (at lower one-third height of plant) (mm)			✓							12.8
Leaf: length of blade of the third leaf from top including flag leaf (cm)								✓		65
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		7.9
Panicle: length without peduncle			✓							18.8
Panicle: length of branches (middle third of panicle)						✓				7.1
Panicle: density at maturity (ear head compactness)						✓				Semi loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)			✓							8.7
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability						✓				Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing	✓									White
Grain: weight of 1000 grains (g)								✓		43.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ								✓		Large
Grain: texture of endosperm (in longitudinal section)								✓		25 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre						✓				Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score			✓							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

6 SSV 84 Salient Features



1. Pedigree: Selection from IS 23568 (Bred by MPKV, Rahuri)
2. Days to 50 % flowering: 77 days
3. Plant height (m): 1.5
4. Plant girth (mm): 13.7
5. Biomass yield (t ha^{-1}): 20.9
6. Juice yield (t ha^{-1}): 9.1
7. Juice extraction (%): 43.4
8. Brix (%): 1.0
9. Sugar yield (t ha^{-1}): 0.7
10. Grain yield (t ha^{-1}): 3.0
11. Sucrose (%): 3.7
12. Glucose (%): 1.2
13. Fructose (%): 1.1
14. pH of juice: 5.2
15. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 16.6
16. Tolerance to: Aphids, Shoot fly.
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		√								Purple
Leaf sheath: anthocyanin colouration			√							Purple
Leaf: midrib colour (5th fully developed leaf)		√								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)					√					72
Plant: natural height of foliage up to base of flag leaf			√							1.3 m
Flag leaf: extension of discoloration of midrib							√			Strong
Flag leaf: intensity of green coloration of midrib compared to the blade		√								Same color
Flag leaf: yellow coloration of midrib	√									Absent
Glume hair color	√									Absent
Lemma: arista formation (awns)	√									Absent
Stigma: anthocyanin coloration	√									Absent
Stigma: yellow coloration					√					Medium
Stigma length (mm)			√							Short
Flower with pedicel: length of flower						√				Medium
Anther: length			√							Short
Anther: colour of dry anther				√						Orange
Glume: color						√				Red
Plant: total height						√				1.5 m
Stem: diameter (at lower one-third height of plant) (mm)			√							13.7
Leaf: length of blade of the third leaf from top including flag leaf (cm)							√			78.4
Leaf: width of blade of the third leaf from top including flag leaf (cm)								√		8.1
Panicle: length without peduncle			√							16.1
Panicle: length of branches (middle third of panicle)					√					6.1
Panicle: density at maturity (ear head compactness)						√				Semi loose
Panicle: shape			√							Symmetric
Neck of panicle: visible length above sheath (cm)						√				10.2
Glume coverage (%)	√									25
Shattering			√							Low
Threshability					√					Partly threshable
Grain form	√									Single
Caryopsis: colour after threshing	√									White
Grain: weight of 1000 grains (g)						√				32.0
Grain: shape in dorsal view			√							Circular
Grain: shape in profile view			√							Circular
Grain: size of mark of germ								√		Large
Grain: texture of endosperm (in longitudinal section)						√				50 % corneous
Grain: colour of vitreous albumen			√							Yellow
Grain: lustre						√				Medium
Seedling vigor score	√									Most vigorous
Leaf glossy score	√									Glossy
Plant aspect score				√						Below average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

7 RSV 9 (CSV 19SS) Salient Features



1. Pedigree: (RSV 2 × SPV 462)-2-1-1 (Bred by MPKV, Rahuri)
2. Days to 50 % flowering: 71 days
3. Plant height (m): 1.9
4. Plant girth (mm): 14.4
5. Biomass yield (t ha^{-1}): 27.5
6. Juice yield (t ha^{-1}): 10.6
7. Juice extraction (%): 38.7
8. Brix (%): 14
9. Sugar yield (t ha^{-1}): 1.1
10. Grain yield (t ha^{-1}): 3.1
11. Sucrose (%): 4.1
12. Glucose (%): 1.5
13. Fructose (%): 1.2
14. pH of juice: 5.2
15. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 16.0
16. Tolerance to: Aphids, Shoot fly
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)		✓								71
Plant: natural height of foliage up to base of flag leaf						✓				1.8 m
Flag leaf: extension of discoloration of midrib						✓				Medium
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)									✓	Strong
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration						✓				Medium
Stigma length (mm)						✓				Medium
Flower with pedicel: length of flower						✓				Medium
Anther: length						✓				Medium
Anther: colour of dry anther					✓					Orange
Glume: color						✓				Red
Plant: total height								✓		1.9
Stem: diameter (at lower one-third height of plant) (mm)			✓							14.4
Leaf: length of blade of the third leaf from top including flag leaf (cm)								✓		63.9
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		7.3
Panicle: length without peduncle			✓							13.7
Panicle: length of branches (middle third of panicle)					✓					5.7
Panicle: density at maturity (ear head compactness)								✓		Semi compact
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)	✓									2.0
Glume coverage (%)			✓							33
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing					✓					Yellow
Grain: weight of 1000 grains (g)			✓							33.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ								✓		Large
Grain: texture of endosperm (in longitudinal section)						✓				50 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre						✓				Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score			✓							Good

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

8 ICSB 38 Salient Features



1. Pedigree: [(BT × 623 × MR 862)B lines bulk]-5-1-3-5
2. Days to 50 % flowering: 69 days
3. Plant height (m): 0.9
4. Plant girth (mm): 16.0
5. Biomass yield (t ha⁻¹): 9.6
6. Juice yield (t ha⁻¹): 3.3
7. Juice extraction (%): 34.1
8. Brix (%): 11
9. Sugar yield (t ha⁻¹): 0.3
10. Grain yield (t ha⁻¹): 3.8
11. Sucrose (%): 5.0
12. Glucose (%): 2.0
13. Fructose (%): 1.5
14. pH of juice: 5.3
15. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 16.9
16. Tolerance to: Shoot fly, Stem borer, Rust
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration	✓									Tan
Leaf: midrib colour (5th fully developed leaf)			✓							Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)					✓					69
Plant: natural height of foliage up to base of flag leaf				✓						0.7 m
Flag leaf: extension of discoloration of midrib					✓					Medium
Flag leaf: intensity of green coloration of midrib compared to the blade			✓							Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower			✓							Short
Anther: length			✓							Short
Anther: colour of dry anther				✓						Orange
Glume: color					✓					Red
Plant: total height			✓							0.9
Stem: diameter (at lower one-third height of plant) (mm)			✓							16.0
Leaf: length of blade of the third leaf from top including flag leaf (cm)							✓			70.3
Leaf: width of blade of the third leaf from top including flag leaf (cm)							✓			7.2
Panicle: length without peduncle					✓					27.7
Panicle: length of branches (middle third of panicle)					✓					9.2
Panicle: density at maturity (ear head compactness)					✓					Semi loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)								✓		20.3
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing	✓									White
Grain: weight of 1000 grains (g)					✓					28.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ							✓			Large
Grain: texture of endosperm (in longitudinal section)							✓			25 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre					✓					Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score				✓						Below average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

9 ICSB 474 Salient Features



1. Pedigree: (IS 18342 × ICSB 6) 11-1-1-2-2
2. Days to 50 % flowering: 74 days
3. Plant height (m): 1.0
4. Plant girth (mm): 12.6
5. Biomass yield (t ha⁻¹): 17.0
6. Juice yield (t ha⁻¹): 4.2
7. Juice extraction (%): 24.4
8. Brix (%): 11
9. Sugar yield (t ha⁻¹): 0.3
10. Grain yield (t ha⁻¹): 3.3
11. Sucrose (%): 4.7
12. Glucose (%): 1.2
13. Fructose (%): 1.0
14. pH of juice: 5.2
15. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 17.4
16. Tolerance to: Stem borer
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		√								Purple
Leaf sheath: anthocyanin colouration			√							Purple
Leaf: midrib colour (5th fully developed leaf)		√								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)					√					74
Plant: natural height of foliage up to base of flag leaf				√						1.4 m
Flag leaf: extension of discoloration of midrib	√									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		√								Same color
Flag leaf: yellow coloration of midrib	√									Absent
Glume hair color	√									Absent
Lemma: arista formation (awns)									√	Strong
Stigma: anthocyanin coloration	√									Absent
Stigma: yellow coloration					√					Medium
Stigma length (mm)					√					Medium
Flower with pedicel: length of flower			√							Short
Anther: length			√							Short
Anther: colour of dry anther				√						Orange
Glume: color		√								Straw
Plant: total height					√					1.0 m
Stem: diameter (at lower one-third height of plant) (mm)			√							12.6
Leaf: length of blade of the third leaf from top including flag leaf (cm)							√			66.7
Leaf: width of blade of the third leaf from top including flag leaf (cm)							√			7.6
Panicle: length without peduncle			√							19.4
Panicle: length of branches (middle third of panicle)					√					6.7
Panicle: density at maturity (ear head compactness)								√		Semi compact
Panicle: shape			√							Symmetric
Neck of panicle: visible length above sheath (cm)			√							9.4
Glume coverage (%)					√					67
Shattering			√							Low
Threshability					√					Partly threshable
Grain form	√									Single
Caryopsis: colour after threshing				√						Yellow
Grain: weight of 1000 grains (g)					√					27.0
Grain: shape in dorsal view			√							Circular
Grain: shape in profile view			√							Circular
Grain: size of mark of germ								√		Large
Grain: texture of endosperm (in longitudinal section)								√		50 % corneous
Grain: colour of vitreous albumen			√							Yellow
Grain: lustre	√									Non-lustrous
Seedling vigor score	√									Most vigorous
Leaf glossy score	√									Glossy
Plant aspect score			√							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

10 ICSB 502 Salient Features



1. Pedigree: [(ICSB 11 × PM 17500-2-1) × PM 17467B]5-2-2
2. Days to 50 % flowering: 78 days
3. Plant height (m): 0.9
4. Plant girth (mm): 16.4
5. Biomass yield (t ha⁻¹): 15.7
6. Juice yield (t ha⁻¹): 3.9
7. Juice extraction (%): 24.8
8. Brix (%): 13
9. Sugar yield (t ha⁻¹): 0.4
10. Grain yield (t ha⁻¹): 2.5
11. Sucrose (%): 4.1
12. Glucose (%): 2.0
13. Fructose (%): 0.9
14. pH of juice: 5.4
15. Electrical conductivity of Juice (mS m⁻¹—milli siemens per metre): 13.5
16. Tolerance to: Midge
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile			✓							Purple
Leaf sheath: anthocyanin colouration	✓									Tan
Leaf: midrib colour (5th fully developed leaf)			✓							Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)							✓			78
Plant: natural height of foliage up to base of flag leaf				✓						0.8 m
Flag leaf: Extension of discoloration of midrib					✓					Medium
Flag leaf: intensity of green coloration of midrib compared to the blade			✓							Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower					✓					Medium
Anther: length	✓									Short
Anther: colour of dry anther				✓						Orange
Glume: color					✓					Red
Plant: total height			✓							0.9
Stem: diameter (at lower one-third height of plant) (mm)			✓							16.4
Leaf: length of blade of the third leaf from top including flag leaf (cm)							✓			74.6
Leaf: width of blade of the third leaf from top including flag leaf (cm)							✓			7.2
Panicle: length without peduncle					✓					24.9
Panicle: length of branches (middle third of panicle)					✓					5.8
Panicle: density at maturity (ear head compactness)							✓			Semi compact
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)			✓							8
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing				✓						Yellow
Grain: weight of 1000 grains (g)					✓					31.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ					✓					Medium
Grain: texture of endosperm (in longitudinal section)					✓					50 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre					✓					Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score			✓							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

11 ICSB 675 Salient Features



1. Pedigree: (E 36-1 × ICSB 17)12-2
2. Days to 50 % flowering: 76 days
3. Plant height (m): 0.8
4. Plant girth (mm): 19.7
5. Biomass yield (t ha^{-1}): 13.7
6. Juice yield (t ha^{-1}): 4.8
7. Juice extraction (%): 34.8
8. Brix (%): 9
9. Sugar yield (t ha^{-1}): 0.3
10. Grain yield (t ha^{-1}): 3.5
11. Sucrose (%): 4.4
12. Glucose (%): 1.0
13. Fructose (%): 1.5
14. pH of juice: 5.3
15. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 18.8
16. Tolerance to: Aphids, Terminal drought
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)								✓		76
Plant: natural height of foliage up to base of flag leaf				✓						0.7 m
Flag leaf: extension of discoloration of midrib								✓		Strong
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration						✓				Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower						✓				Medium
Anther: length						✓				Medium
Anther: colour of dry anther				✓						Orange
Glume: color								✓		Black
Plant: total height			✓							0.8
Stem: diameter (at lower one-third height of plant) (mm)			✓							19.7
Leaf: length of blade of the third leaf from top including flag leaf (cm)								✓		72.1
Leaf: width of blade of the third leaf from top including flag leaf (cm)									✓	8.1
Panicle: length without peduncle					✓					24.9
Panicle: length of branches (middle third of panicle)							✓			8.7
Panicle: density at maturity (ear head compactness)					✓					Semi loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)	✓									3.3
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing				✓						Yellow
Grain: weight of 1000 grains (g)					✓					35.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ							✓			Large
Grain: texture of endosperm (in longitudinal section)					✓					50 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre					✓					Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score			✓							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

12 ICSB 731 Salient Features



1. Pedigree: ICSV 1171BF
2. Days to 50 % flowering: 69 days
3. Plant height (m): 1.5
4. Plant girth (mm): 16.4
5. Biomass yield (t ha^{-1}): 17.0
6. Juice yield (%): 5.9
7. Juice extraction (%): 34.8
8. Brix (%): 10
9. Sugar yield (t ha^{-1}): 0.4
10. Grain yield (t ha^{-1}): 2.5
11. Sucrose (%): 4.6
12. Glucose (%): 1.2
13. Fructose (%): 1.5
14. pH of juice: 5.3
15. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 16.8
16. Tolerance: Anthracnose
17. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate variety									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)							✓			69
Plant: natural height of foliage up to base of flag leaf				✓						1.3 m
Flag leaf: extension of discoloration of midrib	✓									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower			✓							Short
Anther: length			✓							Short
Anther: colour of dry anther				✓						Orange
Glume: color		✓								Straw
Plant: total height					✓					1.5 m
Stem: diameter (at lower one-third height of plant) (mm)			✓							16.4
Leaf: length of blade of the third leaf from top including flag leaf (cm)							✓			68.2
Leaf: width of blade of the third leaf from top including flag leaf (cm)							✓			7.6
Panicle: length without peduncle			✓							19.4
Panicle: length of branches (middle third of panicle)					✓					6.7
Panicle: density at maturity (ear head compactness)							✓			Semi compact
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)			✓							6.8
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing				✓						Yellow
Grain: weight of 1000 grains (g)					✓					31.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ							✓			Large
Grain: texture of endosperm (in longitudinal section)							✓			25 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre							✓			Lustorous
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score				✓						Below average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

13 ICSSH 25 Salient Features



1. Pedigree: ICSA 675 × ICSV 700
2. Days to 50 % flowering: 77 days
3. Plant height (m): 1.9
4. Plant girth (mm): 14.4
5. Biomass yield (t ha^{-1}): 31.7
6. Juice yield (t ha^{-1}): 13.3
7. Juice extraction (%): 41.9
8. Brix (%): 14
9. Sugar yield (t ha^{-1}): 1.4
10. Grain yield (t ha^{-1}): 2.7
11. Male fertility restoration (%): 94
12. Sucrose (%): 6.8
13. Glucose (%): 1.3
14. Fructose (%): 1.2
15. pH of juice: 5.2
16. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 13.0
17. Tolerance to: Aphids, Rust
18. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA*

Characteristics	Characteristic value of candidate hybrid									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)							✓			77
Plant: natural height of foliage up to base of flag leaf				✓						1.7 m
Flag leaf: extension of discoloration of midrib	✓									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)					✓					Medium
Flower with pedicel: length of flower					✓					Medium
Anther: length					✓					Medium
Anther: colour of dry anther				✓						Orange
Glume: color					✓					Red
Plant: total height					✓					1.9 m
Stem: diameter (at lower one-third height of plant) (mm)			✓							14.4
Leaf: length of blade of the third leaf from top including flag leaf (cm)							✓			63.78
Leaf: width of blade of the third leaf from top including flag leaf (cm)							✓			7.33
Panicle: length without peduncle					✓					22
Panicle: length of branches (middle third of panicle)					✓					8.5
Panicle: density at maturity (ear head compactness)					✓					Semi loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)			✓							18.78
Glume coverage (%)			✓							33.33
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing				✓						Yellow
Grain: weight of 1000 grains (g)					✓					32.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ					✓					Medium
Grain: texture of endosperm (in longitudinal section)					✓					50 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre	✓									Non-lustrous
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score		✓								Good

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

14 ICSSH 28 Salient Features



1. Pedigree: ICSV 474 × SSV 74
2. Days to 50 % flowering: 73 days
3. Plant height (m): 2.1
4. Plant Girth (mm): 12.1
5. Biomass yield (t ha⁻¹): 31.7
6. Juice yield (t ha⁻¹): 11.9
7. Juice extraction (%): 37.5
8. Brix (%): 15
9. Sugar yield (t ha⁻¹): 1.3
10. Grain yield (t ha⁻¹): 2.6
11. Male fertility restoration (%): 91
12. Sucrose (%): 7.9
13. Glucose (%): 1.0
14. Fructose (%): 1.1
15. pH of juice: 5.2
16. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 15.4
17. Tolerance to: Aphids, Shoot fly
18. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate hybrid									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		✓								Purple
Leaf sheath: anthocyanin colouration			✓							Purple
Leaf: midrib colour (5th fully developed leaf)		✓								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)					✓					73
Plant: natural height of foliage up to base of flag leaf			✓							1.9 m
Flag leaf: extension of discoloration of midrib	✓									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		✓								Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)					✓					Medium
Flower with pedicel: length of flower					✓					Short
Anther: length					✓					Medium
Anther: colour of dry anther				✓						Orange
Glume: color				✓						Light red
Plant: total height					✓					2.1 m
Stem: diameter (at lower one-third height of plant) (mm)		✓								12.1
Leaf: length of blade of the third leaf from top including flag leaf (cm)							✓			65.11
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		8.22
Panicle: length without peduncle								✓		43
Panicle: length of branches (middle third of panicle)					✓					7.78
Panicle: density at maturity (ear head compactness)			✓							Loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)								✓		15.33
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability					✓					Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing	✓									White
Grain: weight of 1000 grains (g)					✓					12.1
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ					✓					Medium
Grain: texture of endosperm (in longitudinal section)								✓		25 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre					✓					Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score			✓							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

15 ICSSH 58 Salient Features



1. Pedigree: ICSA 731 × ICSA 93046 (First A2 *cms* system based hybrid)
2. Days to 50 % flowering: 78 days
3. Plant height (m): 2.3
4. Plant girth (mm): 14.6
5. Biomass yield (t ha⁻¹): 38.1
6. Juice yield (t ha⁻¹): 15.8
7. Juice extraction (%): 41.5
8. Brix (%): 17
9. Sugar yield (t ha⁻¹): 2.0
10. Grain yield (t ha⁻¹): 3.2
11. Male fertility restoration (%): 85
12. Sucrose (%): 6.9
13. Glucose (%): 1.1
14. Fructose (%): 1.5
15. pH of juice: 5.2
16. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 9.6
17. Tolerance to: Aphids, Shoot fly, Anthracnose
18. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate hybrid									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile		√								Purple
Leaf sheath: anthocyanin colouration			√							Purple
Leaf: midrib colour (5th fully developed leaf)		√								Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)									√	78
Plant: natural height of foliage up to base of flag leaf				√						2.0 m
Flag leaf: extension of discoloration of midrib	√									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade		√								Same color
Flag leaf: yellow coloration of midrib	√									Absent
Glume hair color	√									Absent
Lemma: arista formation (awns)	√									Absent
Stigma: anthocyanin coloration	√									Absent
Stigma: yellow coloration					√					Medium
Stigma length (mm)			√							Short
Flower with pedicel: length of flower			√							Short
Anther: length			√							Short
Anther: colour of dry anther				√						Orange
Glume: color		√								Straw
Plant: total height					√					2.3 m
Stem: diameter (at lower one-third height of plant) (mm)			√							14.6
Leaf: length of blade of the third leaf from top including flag leaf (cm)								√		65.78
Leaf: width of blade of the third leaf from top including flag leaf (cm)								√		7.61
Panicle: length without peduncle			√							17.78
Panicle: length of branches (middle third of panicle)					√					6.67
Panicle: density at maturity (ear head compactness)								√		Semi compact
Panicle: shape			√							Symmetric
Neck of panicle: visible length above sheath (cm)					√					15.33
Glume coverage (%)	√									25
Shattering			√							Low
Threshability					√					Partly threshable
Grain form	√									Single
Caryopsis: colour after threshing				√						Yellow
Grain: weight of 1000 grains (g)			√							26.0
Grain: shape in dorsal view			√							Circular
Grain: shape in profile view			√							Circular
Grain: size of mark of germ						√				Medium
Grain: texture of endosperm (in longitudinal section)						√				50 % corneous
Grain: colour of vitreous albumen			√							Yellow
Grain: lustre	√									Non-lustrous
Seedling vigor score	√									Most vigorous
Leaf glossy score	√									Glossy
Plant aspect score			√							Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

16 ICSSH 76 Salient Features



1. Pedigree: ICSA 502 × ICSV 25284
2. Days to 50 % flowering: 80 days
3. Plant height (m): 1.9
4. Plant girth (mm): 13.6
5. Biomass yield (t ha⁻¹): 34.4
6. Juice yield (t ha⁻¹): 14.2
7. Juice extraction (%): 41.4
8. Brix (%): 13
9. Sugar yield (t ha⁻¹): 1.4
10. Grain yield (t ha⁻¹): 4.2
11. Male fertility restoration (%): 97
12. Sucrose (%): 3.3
13. Glucose (%): 1.1
14. Fructose (%): 1.3
15. pH of juice: 5.4
16. Electrical conductivity of juice (mS m⁻¹—milli siemens per metre): 12.9
17. Tolerance to: Anthracnose
18. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate hybrid									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile	✓									Green
Leaf sheath: anthocyanin colouration	✓									Tan
Leaf: midrib colour (5th fully developed leaf)			✓							Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)										80
Plant: natural height of foliage up to base of flag leaf				✓						1.7 m
Flag leaf: extension of discoloration of midrib	✓									Absent
Flag leaf: intensity of green coloration of midrib compared to the blade			✓							Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration					✓					Medium
Stigma length (mm)			✓							Short
Flower with pedicel: length of flower						✓				Medium
Anther: length						✓				Medium
Anther: colour of dry anther				✓						Orange
Glume: color		✓								Straw
Plant: total height					✓					1.9 m
Stem: diameter (at lower one-third height of plant) (mm)					✓					13.6
Leaf: length of blade of the third leaf from top including flag leaf (cm)								✓		78.11
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		8
Panicle: length without peduncle						✓				25
Panicle: length of branches (middle third of panicle)						✓				8.22
Panicle: density at maturity (ear head compactness)						✓				Semi loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)								✓		23.78
Glume coverage (%)				✓						33.33
Shattering				✓						Low
Threshability						✓				Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing					✓					Yellow
Grain: weight of 1000 grains (g)						✓				31.0
Grain: shape in dorsal view				✓						Circular
Grain: shape in profile view				✓						Circular
Grain: size of mark of germ							✓			Medium
Grain: texture of endosperm (in longitudinal section)							✓			50 % corneous
Grain: colour of vitreous albumen				✓						Yellow
Grain: lustre							✓			Medium
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score				✓						Average

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

17 CSH 22 SS Salient Features



1. Pedigree: ICSA 38 × SSV 84
2. Days to 50 % flowering: 73 days
3. Plant height (m): 2.1
4. Plant girth (mm): 13.8
5. Biomass yield (t ha^{-1}): 36.7
6. Juice yield (t ha^{-1}): 13.1
7. Juice extraction (%): 35.6
8. Brix (%): 13
9. Sugar yield (t ha^{-1}): 1.3
10. Grain yield (t ha^{-1}): 3.7
11. Male fertility restoration (%): 100
12. Sucrose (%): 6.4
13. Glucose (%): 1.8
14. Fructose (%): 1.0
15. pH of juice: 5.3
16. Electrical conductivity of juice (mS m^{-1} —milli siemens per metre): 18.0
17. Tolerance to: Aphids, Shoot fly
18. Adaptation: Post-rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

Characteristics	Characteristic value of candidate hybrid									Remarks measured value etc.
	1	2	3	4	5	6	7	8	9	
Seedling: anthocyanin colouration of coleoptile	✓									Green
Leaf sheath: anthocyanin colouration	✓									Tan
Leaf: midrib colour (5th fully developed leaf)			✓							Dull green
Plant: time of panicle emergence (50 % of the plants with complete panicle emergence)					✓					73
Plant: natural height of foliage up to base of flag leaf			✓							1.8 m
Flag leaf: extension of discoloration of midrib					✓					Medium
Flag leaf: intensity of green coloration of midrib compared to the blade			✓							Same color
Flag leaf: yellow coloration of midrib	✓									Absent
Glume hair color	✓									Absent
Lemma: arista formation (awns)	✓									Absent
Stigma: anthocyanin coloration	✓									Absent
Stigma: yellow coloration						✓				Medium
Stigma length (mm)						✓				Medium
Flower with pedicel: length of flower						✓				Medium
Anther: length						✓				Medium
Anther: colour of dry anther				✓						Orange
Glume: color						✓				Red
Plant: total height						✓				2.1 m
Stem: diameter (at lower one-third height of plant) (mm)						✓				13.8
Leaf: length of blade of the third leaf from top including flag leaf (cm)								✓		63.87
Leaf: width of blade of the third leaf from top including flag leaf (cm)								✓		7.56
Panicle: length without peduncle						✓				23.44
Panicle: length of branches (middle third of panicle)						✓				8.17
Panicle: density at maturity (ear head compactness)			✓							Loose
Panicle: shape			✓							Symmetric
Neck of panicle: visible length above sheath (cm)									✓	26.22
Glume coverage (%)	✓									25
Shattering			✓							Low
Threshability						✓				Partly threshable
Grain form	✓									Single
Caryopsis: colour after threshing					✓					Yellow
Grain: weight of 1000 grains (g)			✓							25.0
Grain: shape in dorsal view			✓							Circular
Grain: shape in profile view			✓							Circular
Grain: size of mark of germ						✓				Medium
Grain: texture of endosperm (in longitudinal section)									✓	25 % corneous
Grain: colour of vitreous albumen			✓							Yellow
Grain: lustre	✓									Non-lustrous
Seedling vigor score	✓									Most vigorous
Leaf glossy score	✓									Glossy
Plant aspect score		✓								Good

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