






JOHN FEARLESS

BREW BOLD. BREW FEARLESS.

HOP SELECTION CHART

HOP VARIETAL	ALPHA ACIDS (RANGE %)	BETA ACID (RANGE %)	TOTAL OILS (MLS PER 100GR DRIED)	HOP USAGE	AROMA AND FLAVOR CHARACTERISTICS
 Main Growing Country: South Africa					
XJA-436	12.9 – 15.4	7.8 – 8.4	1.06	Bittering & Aroma	Moderate berry and fruity flavors.
NI-69	13 – 13.4	4.9	N/A	Dual Purpose	Unique profile with pineapple, citrus, and melon flavors.
Southern Passion	5 – 8	7 – 8	0.8 – 1	Aroma	Aroma profile that includes passion fruit, guava, red berries, calendula and melon.
African Queen	14.0 – 17	3.9 – 5.6	1.3	Dual Purpose	Strong citrus, stone fruit, black currant and gooseberry notes.
Southern Promise	9.5 – 11.5	3.6 – 5.4	0.7	Dual Purpose	Smooth and clean bitterness with woody and earthy fragrance.
Southern Star	12.0 – 15.5	4.8 – 5.2	1.6	Aroma	Tropical aromas with slight berry notes with neutral bittering.
Southern Dawn	11.2 – 13	4.3 – 5.9	0.6	Bittering	Slight fruit and spice fragrance.
Southern Aroma	3.6 – 4	5	0.6 – 0.8	Aroma	Classic noble hop character and fruity terroir backdrop.
 Main Growing Country: New Zealand					
Southern Cross™	11 – 14	5 – 6	1.2	Dual Purpose	Clean spicy notes with lemon peel and pine aroma character.
Dr Rudi	10.0 – 12.0	7.0 – 8.5	1.3	Dual Purpose	Aromas of resin, pine and lemongrass.
Taiheke	6 – 8	5.0 – 5.5	1.1	Aroma	Fruit forward aroma and oils profile making a refreshing finish.
Pacific Jade™	12.0 – 14.0	7.0 – 8.0	1.4	Dual Purpose	Incredibly rich aroma of spicy black pepper, bold citrus and herbs.
Pacifica	5.0 – 6.0	6	1	Aroma	Aromatic hop that retains spicy and sort of a cinnamon blend.
Wakatu™	6.5 – 8.5	8.5	1	Dual Purpose	Distinct floral character with slight emphasis on citrus and lime aromas.
Rakau™	10 – 11	5 – 6	2.2	Dual Purpose	Dominant fruitiness with fresh stone fruits such as apricot.
Motueka	6.5 – 7.5	5.0 – 5.5	0.8	Aroma	Exciting fruit aroma with refreshing notes of tropical fruit and lime/citrus. Think 'mojito' like.
Nelson Sauvign	12 – 13	6 – 8	1.0 – 1.2	Aroma	Subtle aromas and cool climate white wine "fruitiness".
 Main Growing Country: USA					
Amarillo®	8.0 – 11.0	6.0 – 7.0	1.5 – 1.9	Aroma/Flavor	Aroma hop delivering floral, tropical, and delicious orange citrus flavor.
Azacca®	14 – 16	4.0 – 5.5	1.6 – 2.5	Dual Purpose	Delivers a complex set of aromas including mango, papaya, orange, grapefruit, lemon, pine and spice.
Cascade	4.5 – 7.0	4.5 – 7.0	0.8 – 1.5	Aroma/Flavor	Tangy grapefruit flavor and classic citrus tones.
Centennial	9.5 – 11.5	3.5 – 4.5	1.5 – 2.5	Dual Purpose	Medium aromatic intensity. Floral, and uniquely pungent flavor with intense citrus and catty aroma.
Citra®	11.0 – 13.0	3.5 – 4.5	2.2 – 2.8	Aroma/Flavor	Intense limes and grapefruit aromas along with gooseberry, passion fruits, and lychee notes.
Mosaic®	11.5 – 13.5	3.2 – 3.9	1.0 – 1.5	Aroma/Flavor	Unique and complex blend of mango, rosy, blueberry, citrus, and pine aromas.
Pekko®	13 – 16	3.5 – 4.25	2.1 – 2.7	Dual Purpose	Flavors are citrus, floral, tropical, and lemongrass.
ADHA 484	11 – 12	0.035	0.6 – 1.8	Dual Purpose	Fine aroma characteristics with tropical fruity and citrus flavors.
ADHA 529	10.5 – 12	3.5 – 4.5	1.3 – 2.3	Aroma/Flavor	Hints of tea and mint notes with smooth bitterness.
Idaho 7™	9 – 14	3.5 – 9.1	1 – 5	Aroma/Flavor	Juicy tropical and stone fruit with pine and fainter notes of earthy black tea.
El Dorado®	13 – 17	7 – 8	2.5 – 3.3	Aroma	Bold fruit flavors of pineapple and mango. Aromas of pear, watermelon, and stone fruits.
Zappa™	7 – 9	8 – 9	0.8 – 1.2	Aroma/Flavor	New neomexicanus hop. Aroma profile of passion fruit, mint, spice, and fruity pebbles.
Columbus	14 – 18	4.5 – 6	1.5 – 2	Bittering	Extensive use for bittering, but also delivers a punchy hoppiness and pensive aroma hidden by citrus notes.
Nugget	9.5 – 14	4.2 – 5.8	1.5 – 3	Bittering	Herbal aroma and excellent bittering kick.
Chinook	12 – 14	3 – 4	1.5 – 2.7	Bittering & Aroma	Robust flavors of grapefruit and pine-like characteristics.
Jarrylo®	15 – 17	6 – 7.5	3.6 – 4.3	Dual Purpose	Spice aroma boasts banana, grassy, pear, orange and spicy notes.

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