

# cBSc center Brewing Control neXt Chart

Brewing Control next Chart based by weight of coffee and water.

Never need problems of mutable water volume by temperature.

You can easy access for extraction yield with weight scale.



**B**rewing  
**C**ontrol  
ne**X**t  
**C**hart

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## **CBSC center Brewing Control neXt Chart**

Dr. Lockhart's presentation of the coffee brewing control charts has resulted in a theoretical approach to coffee extraction and the intuitive evaluation and improvement of the brewed coffee. In particular, the brewing control chart was very helpful for easy access and consistent coffee brewing because the extraction yield can be easily determined by knowing the coffee strength and the extraction environment of the extracted coffee without complicated formulas. In addition, Dr. Lockhart's charts have played a very important role in quality control of coffee brewing. The strength of coffee used in Dr. Lockhart's brewing control chart was developed based on the mass of coffee vs. volume of water(not coffee solution). Since the 60's various extraction methods for coffee have emerged, causing one or two problems with the application of Dr. Lockhart's brewing control chart. In addition, the use of coffee mass and water volume as the strength for coffee also had the fundamental problem of accurate volume measurement. Dr. Lockhart's chart need a modern improvement. Based with Dr. Lockhart's principle of extraction control charts, we propose a new brewing control chart in a modernly accessible and feasible way.

The brewing control Next chart uses the mass of water instead of the volume of water. Therefore, we changed the criteria from the standard that used half-gallon water and coffee masses to the ratio of water and coffee mass for easy access. Dr. Lockhart's brewing control chart approached the assumption that the coffee used to extract during the brewing process had a certain amount of water after extraction. The ratio of water retained by coffee after extraction was defined as LRR(Liquid Retained Ratio), and Dr. Lockhart's brewing control chart was developed assuming an LRR of 2.0. This approach is very advantageous if you have information about the coffee and water used, such as percolators and French presses. However, when the filter machine is used, the information of the coffee used for brewing and the amount of the brewed coffee can be easily known, but the information about the water used in the filter machine is not known. The new chart presents the same approach as percolator, here the CWR (coffee to water ratio) and filter machine method, here CBR (coffee to Brew Ratio) method. CBR is blue line, left top to right bottom.

Dr. Lockhart's brewing control chart uses a mass of about 106 g (3.75 oz.) of coffee and about 1.9 L (half gallon) of water, such as 3.75 ounces of coffee and 1/2 gallon. It was. In the new chart, using a mass ratio of water to coffee, 106g of coffee and 1,590g of water, the CWR is 15.0 (1,590 / 106). In this case, the volume of water changed depends on the temperature. If the water temperature is 95°C, the volume of water is about 1.653L (1.590 \* 1.00399). However, when the water temperature drops to 20°C the volume is reduced to about 1.593L (1.590 \* 1.00171). The volume of 20°C water is reduced to 96.3% than the volume of 95°C water. The measured value of EC Meter, which is widely used to measure coffee strength, shows the result of converting water volume to 25°C. If the concentration of coffee is measured using an EC meter, the volume of 25°C of water represents the mass of ionic components dissolved in water(ppm). In the brewing control next chart, the volume of water is used according to the 25°C(1.00288). If you use 106 g of coffee, the volume of water is 1.595 liters(106\*15\*1.00288) with CWR 15.0. In the Brewing Control neXt Chart, when using the coffee-to-water ratio (CWR), the Y-axis represents the strength and the X-axis represents the extraction yield. However, for coffee-to-brewed ratio (CBR), use the value located below the X-axis values, and use lines crossed with lines of the CWR. If 200g of coffee solution was brewed using 10g of ground coffee, the extraction yield would be about 25.07% if measured at a strength of 1.25%.

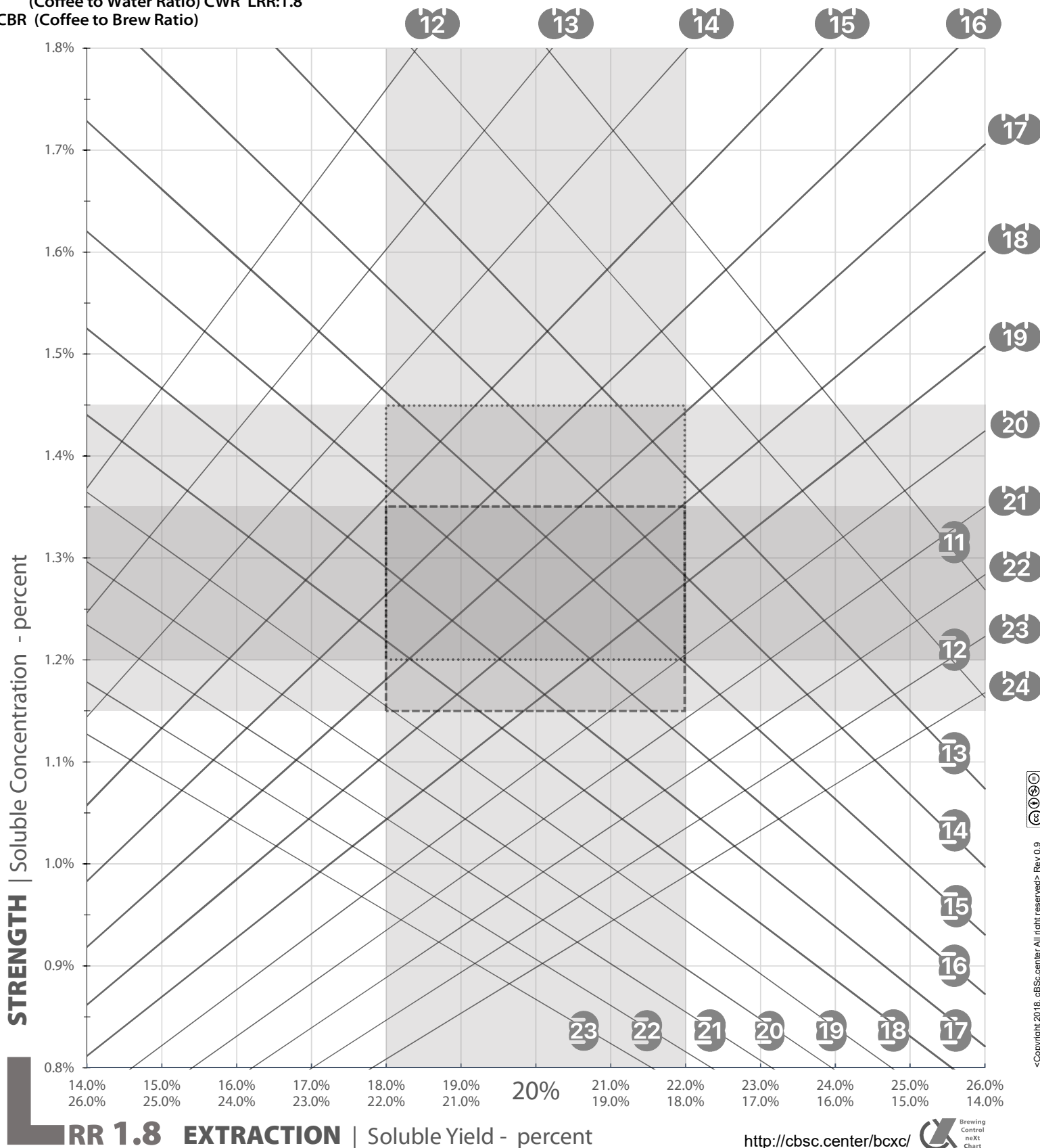
If you visit <http://cbsc.center/bcxc/> and enter a value, you can visually display it and download charts of various LRR values. We hope you use the Brewing Control neXt Chart to help you better control your coffee quality. If you find out any mistakes or suggestions about the Brewing Control neXt Chart, please email to [cbsc.center@gmail.com](mailto:cbsc.center@gmail.com).

# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:1.8

CBR (Coffee to Brew Ratio)



**LRR 1.8 EXTRACTION** | Soluble Yield - percent

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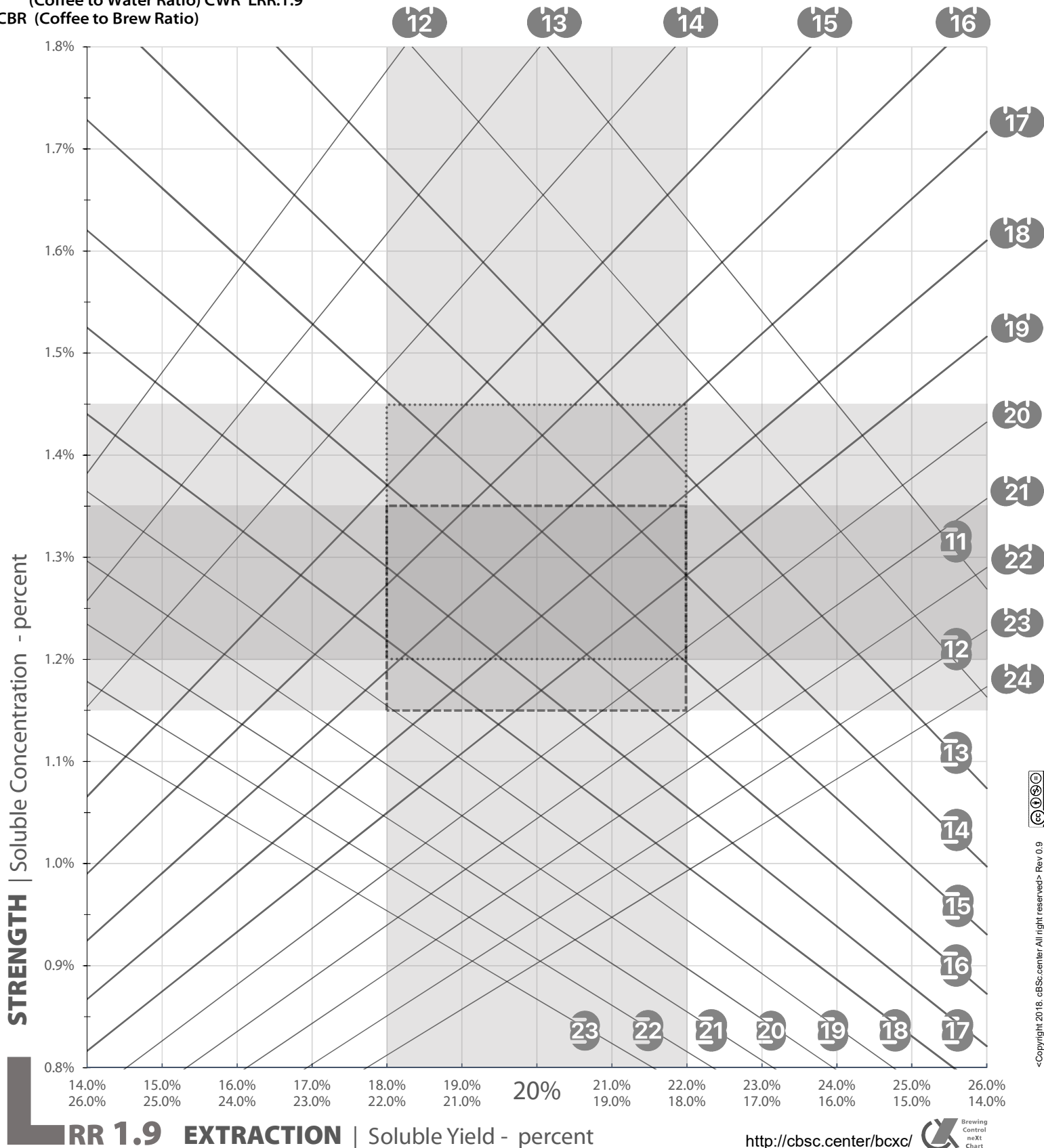
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:1.9

CBR (Coffee to Brew Ratio)



**LRR 1.9 EXTRACTION** | Soluble Yield - percent

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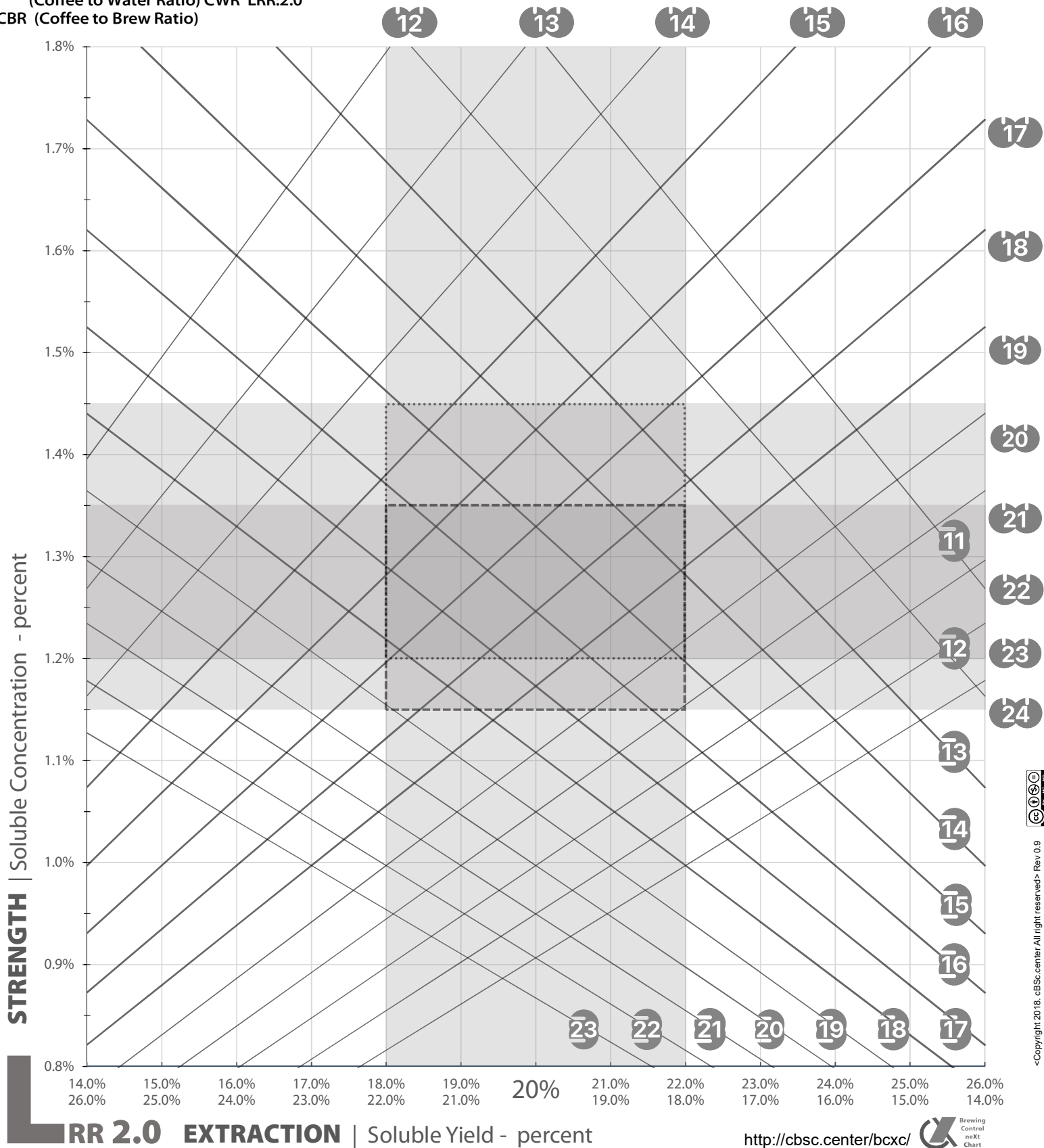


# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.0

CBR (Coffee to Brew Ratio)



**LRR 2.0 EXTRACTION** | Soluble Yield - percent

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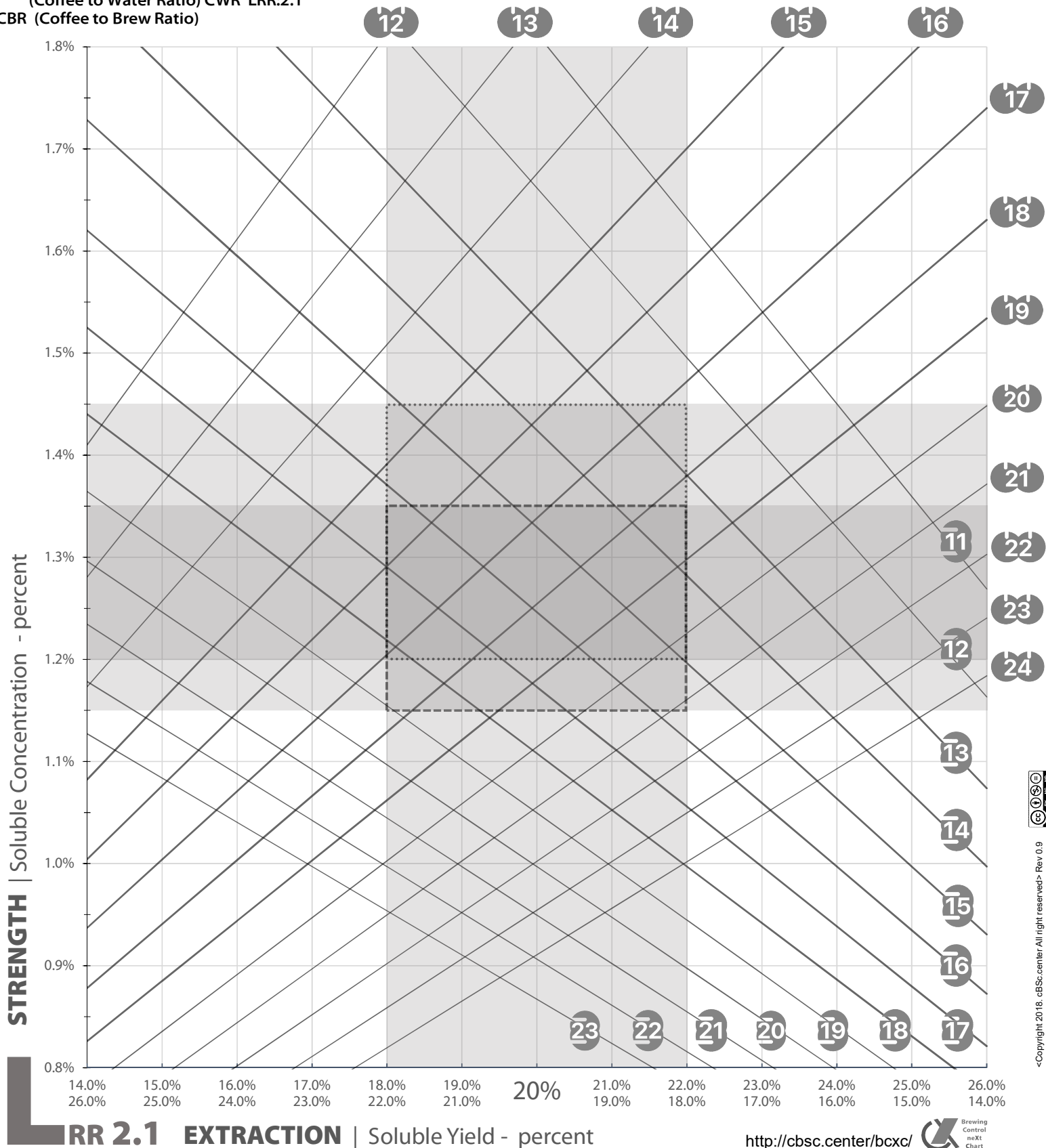
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.1

CBR (Coffee to Brew Ratio)



**LRR 2.1 EXTRACTION** | Soluble Yield - percent

<http://cbssc.center/bcxc/> **Brewing Control neXt Chart**

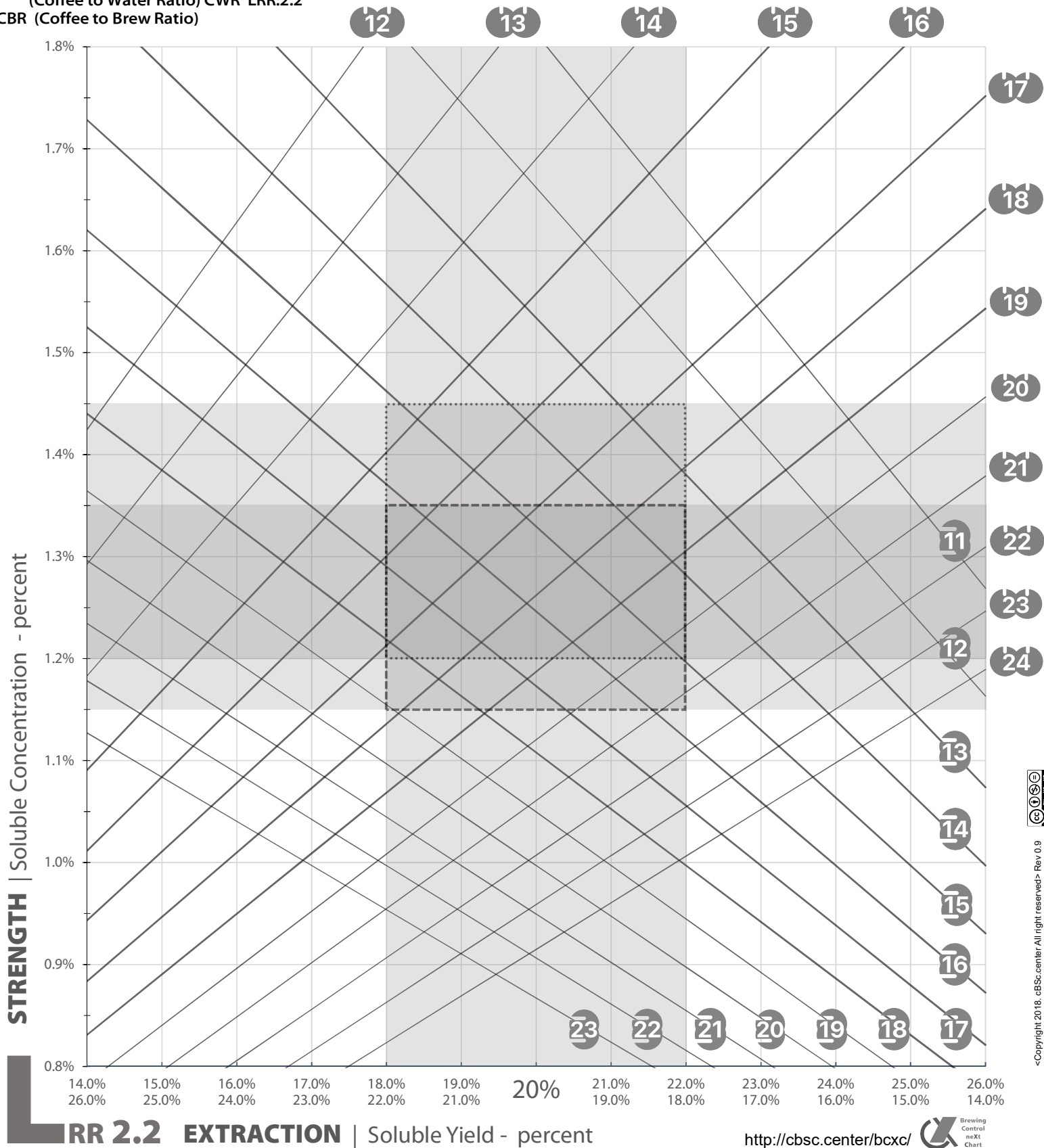
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.2

CBR (Coffee to Brew Ratio)



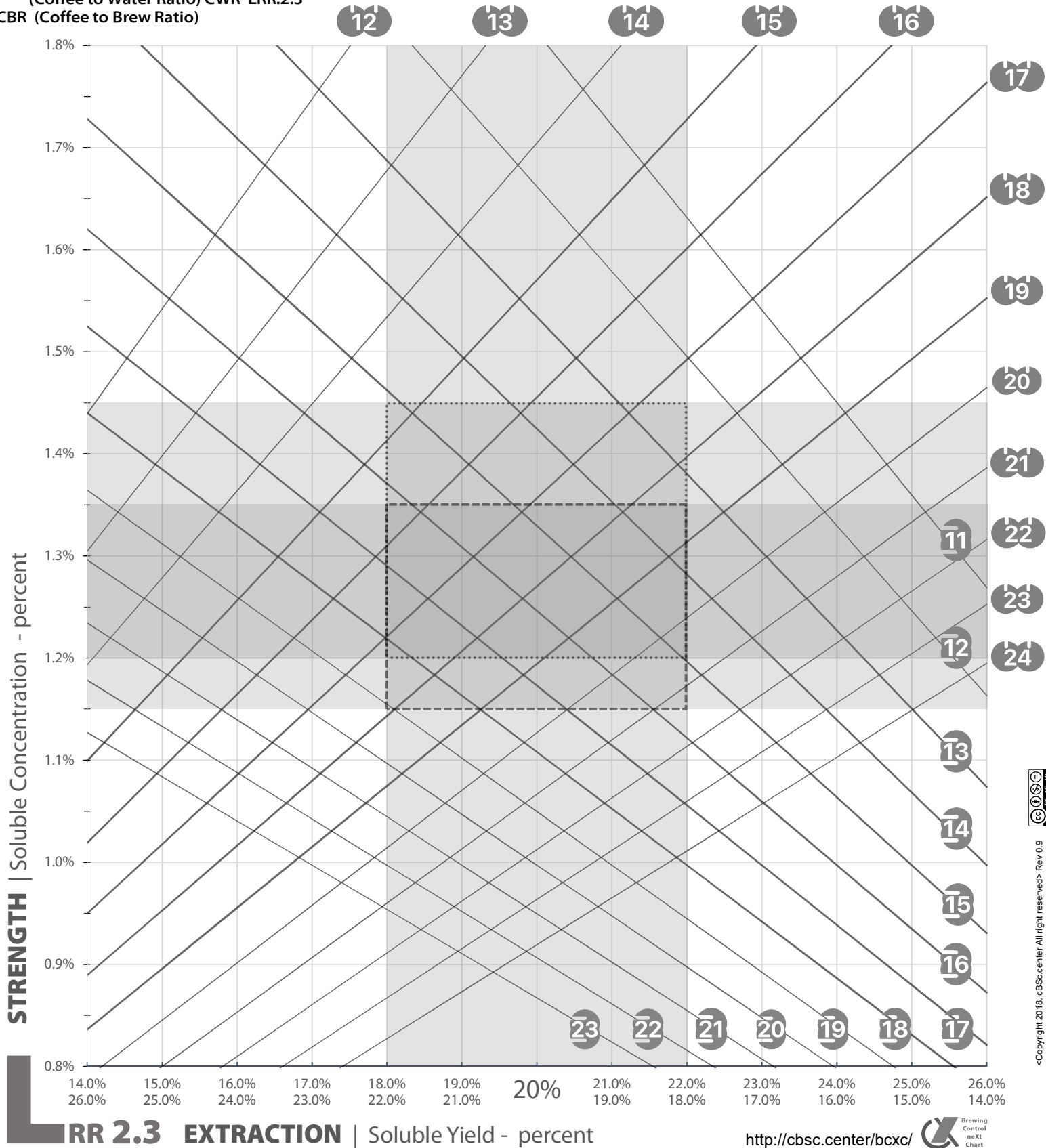
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.3

CBR (Coffee to Brew Ratio)



**LRR 2.3 EXTRACTION** | Soluble Yield - percent

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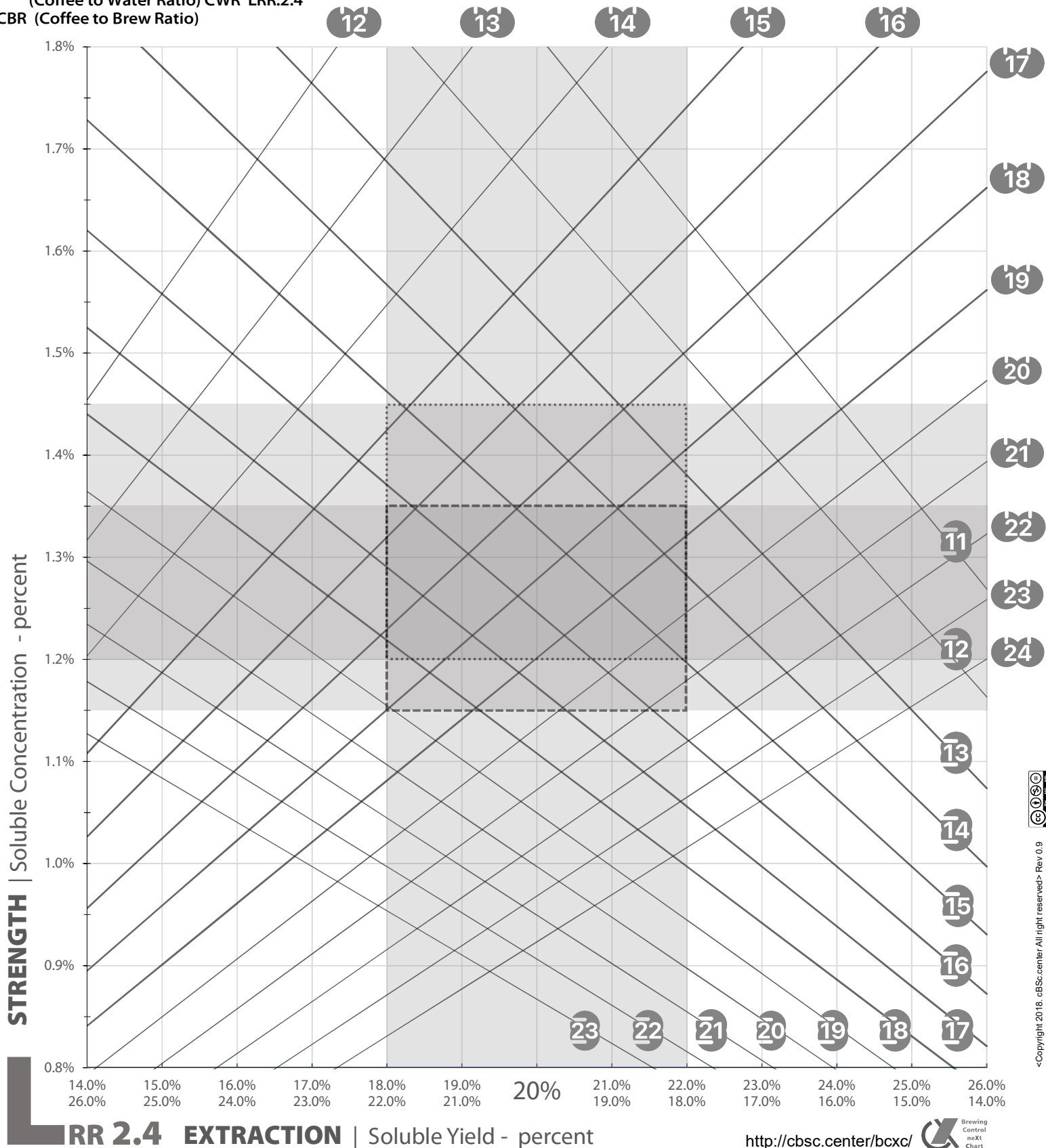
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.4

CBR (Coffee to Brew Ratio)



**LRR 2.4 EXTRACTION** | Soluble Yield - percent

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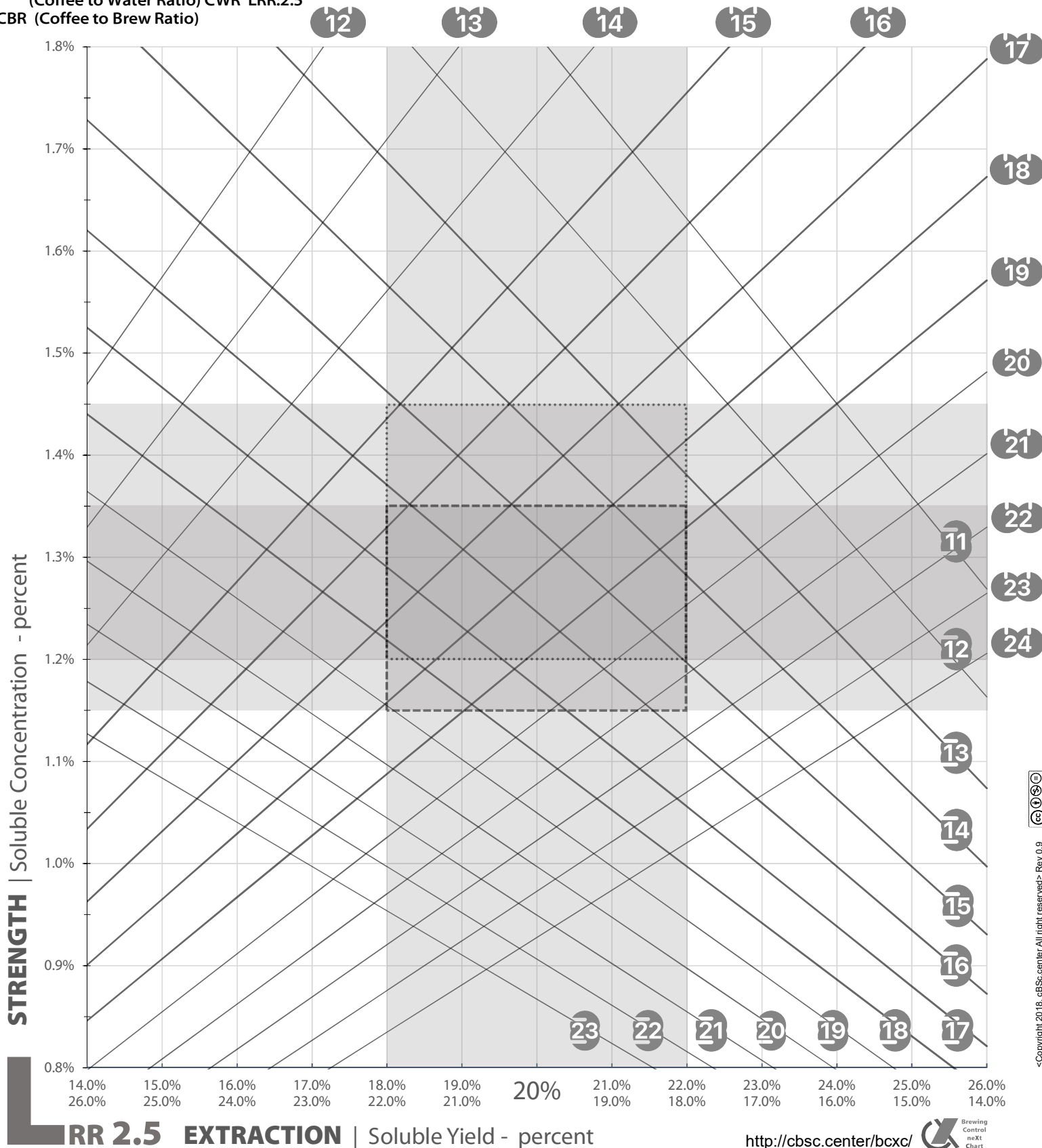


# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.5

CBR (Coffee to Brew Ratio)



**LRR 2.5 EXTRACTION** | Soluble Yield - percent

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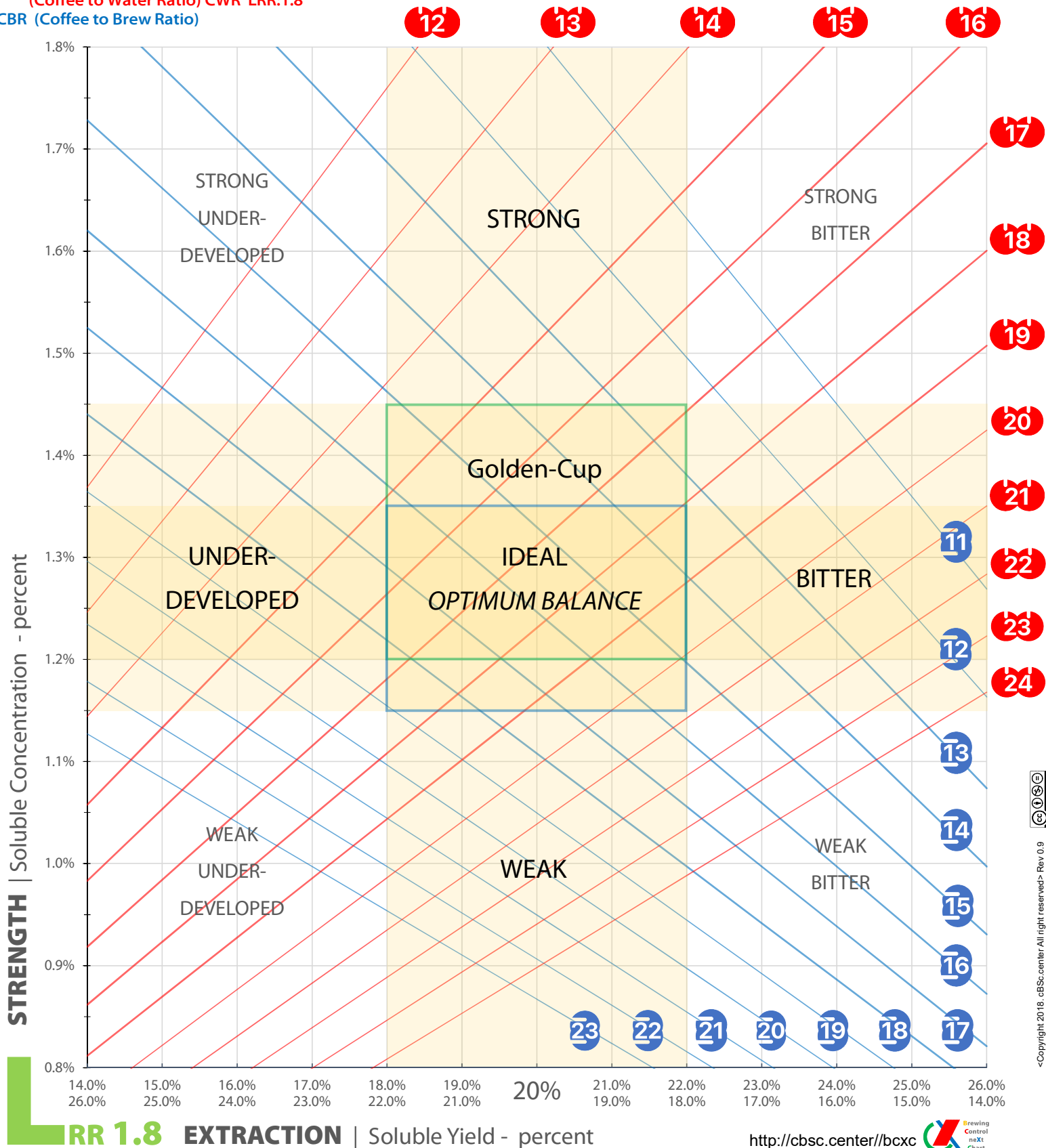


# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:1.8

CBR (Coffee to Brew Ratio)



**RR 1.8 EXTRACTION** | Soluble Yield - percent

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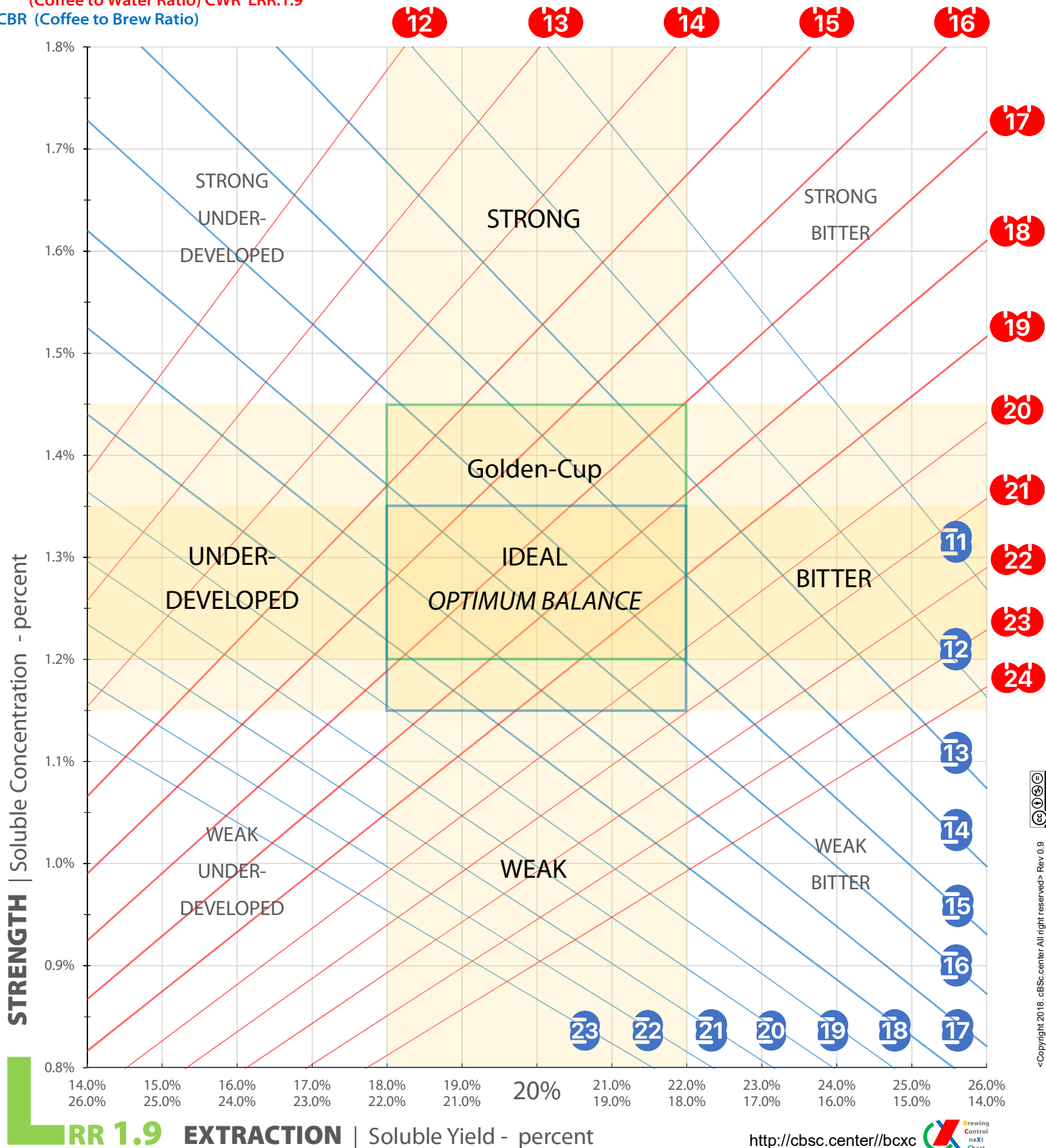
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# Brewing Control neXt Chart

Brewing Ratio: **by Weight**

(Coffee to Water Ratio) CWR LRR:1.9

CBR (Coffee to Brew Ratio)



**RR 1.9 EXTRACTION** | Soluble Yield - percent

<http://cbsc.center/bcxc>



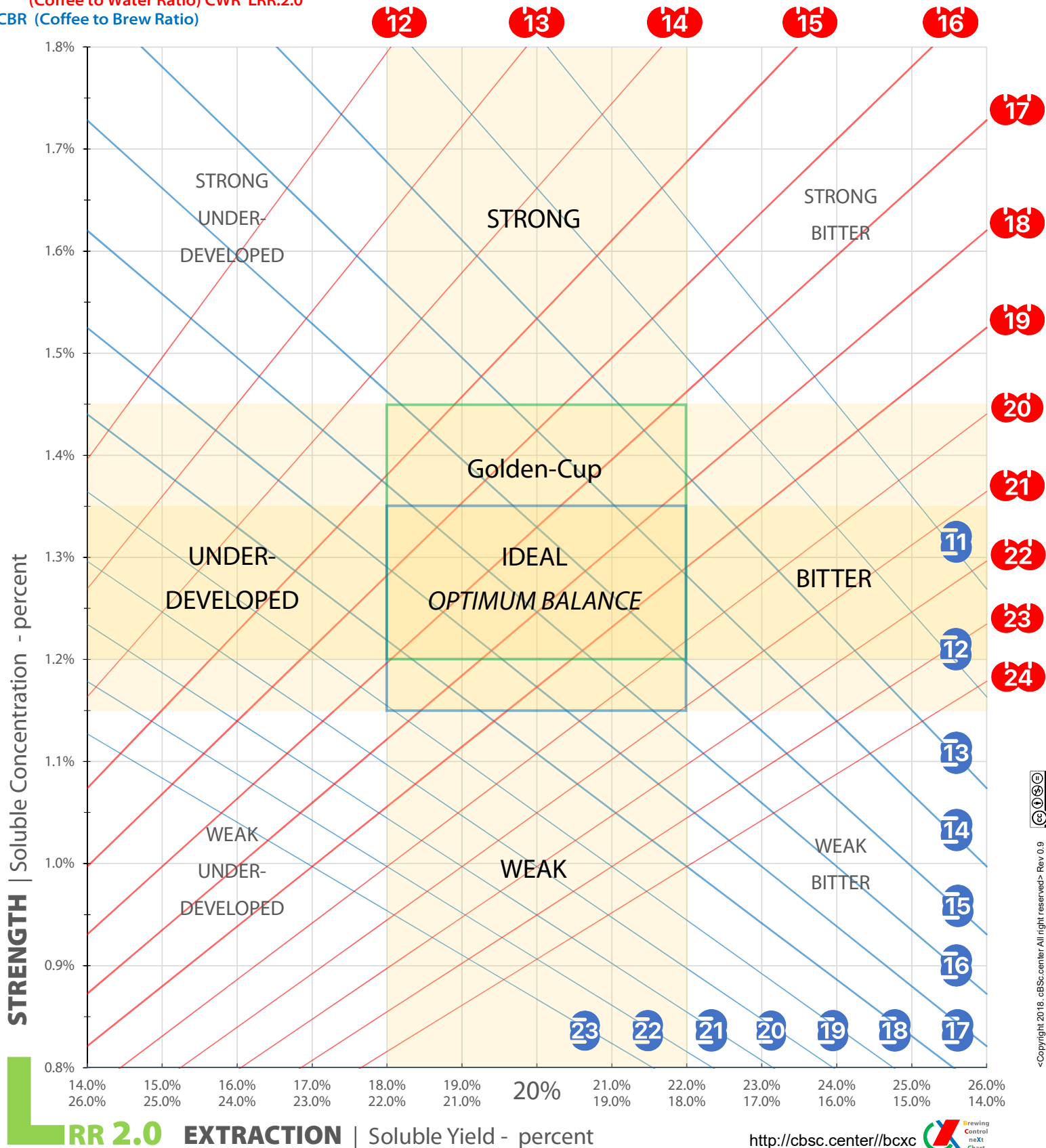
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.0

CBR (Coffee to Brew Ratio)



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**RR 2.0 EXTRACTION** | Soluble Yield - percent

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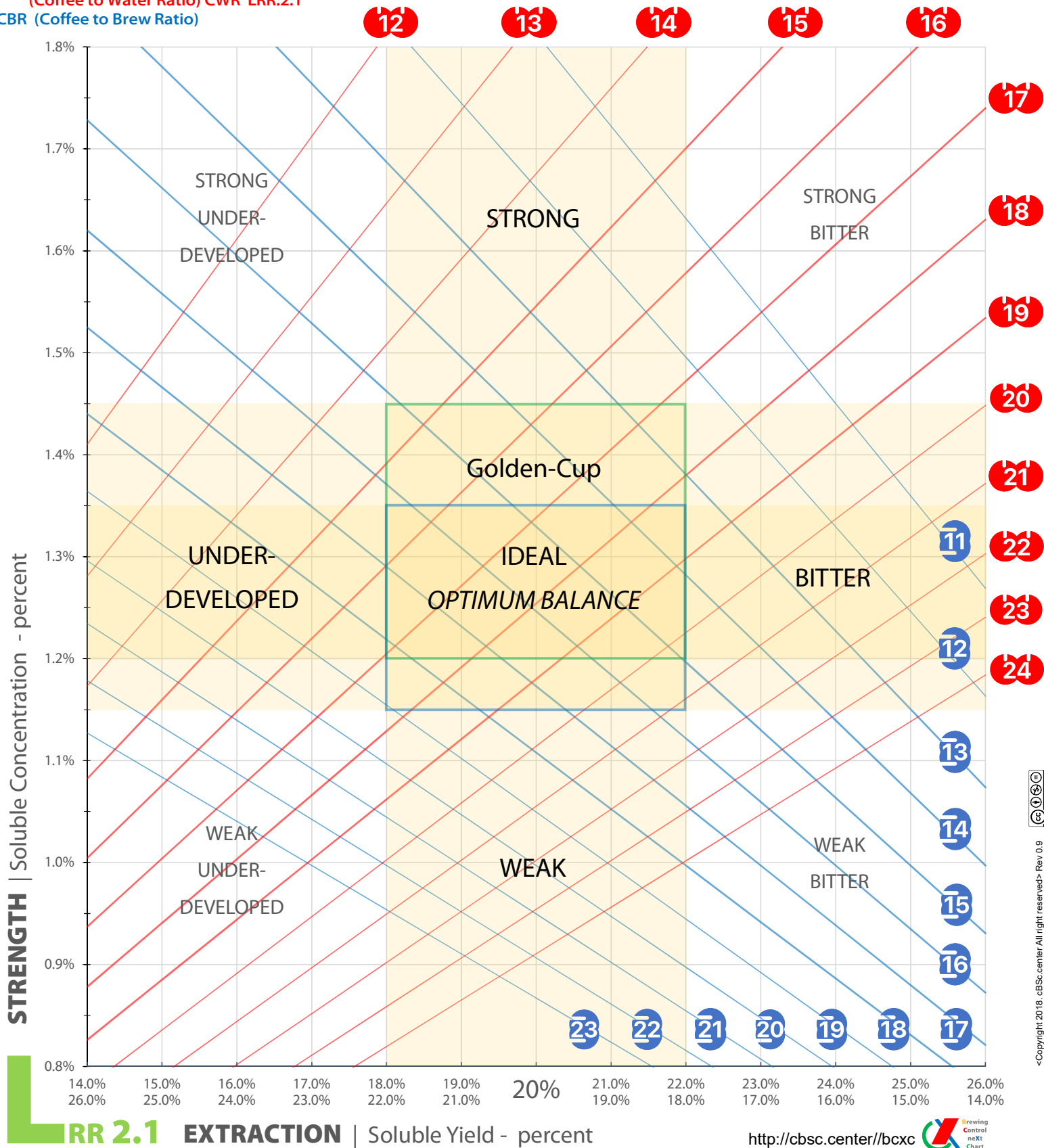
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# Brewing Control neXt Chart

Brewing Ratio: **by Weight**

(Coffee to Water Ratio) CWR LRR:2.1

CBR (Coffee to Brew Ratio)



**RR 2.1 EXTRACTION** | Soluble Yield - percent

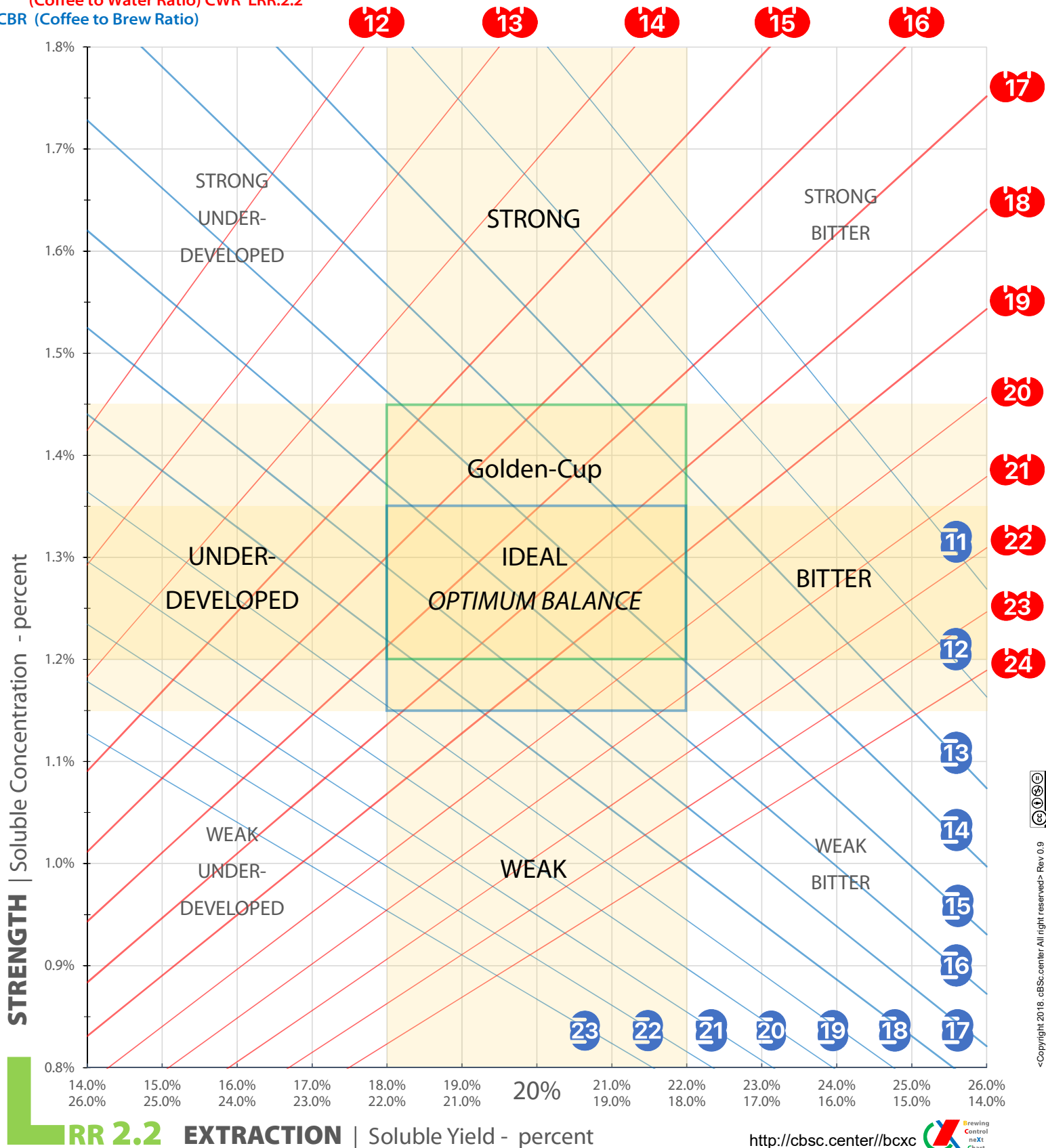
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.2

CBR (Coffee to Brew Ratio)



**STRENGTH** | Soluble Concentration - percent

**RR 2.2 EXTRACTION** | Soluble Yield - percent

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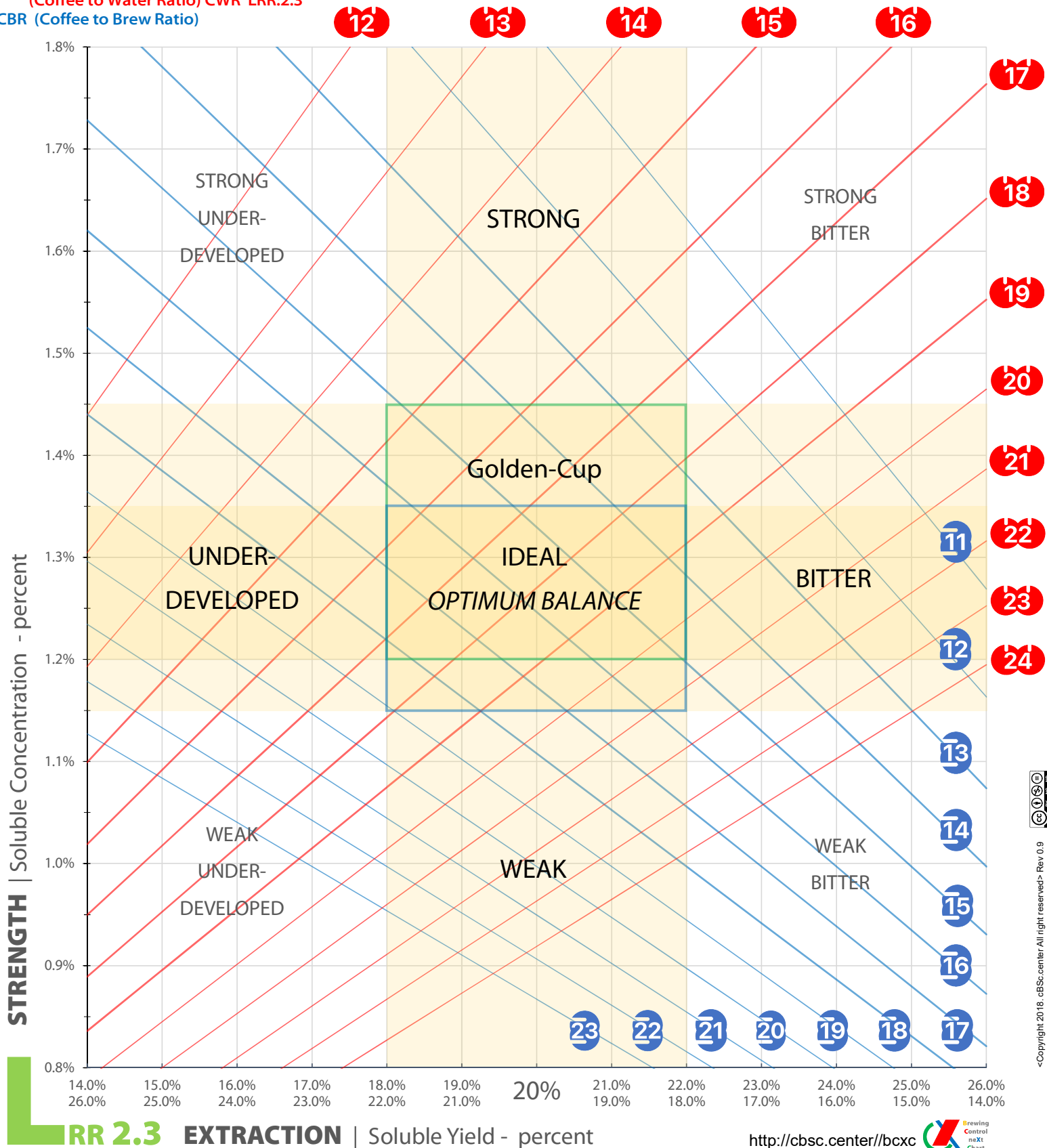


# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.3

CBR (Coffee to Brew Ratio)



**RR 2.3 EXTRACTION** | Soluble Yield - percent

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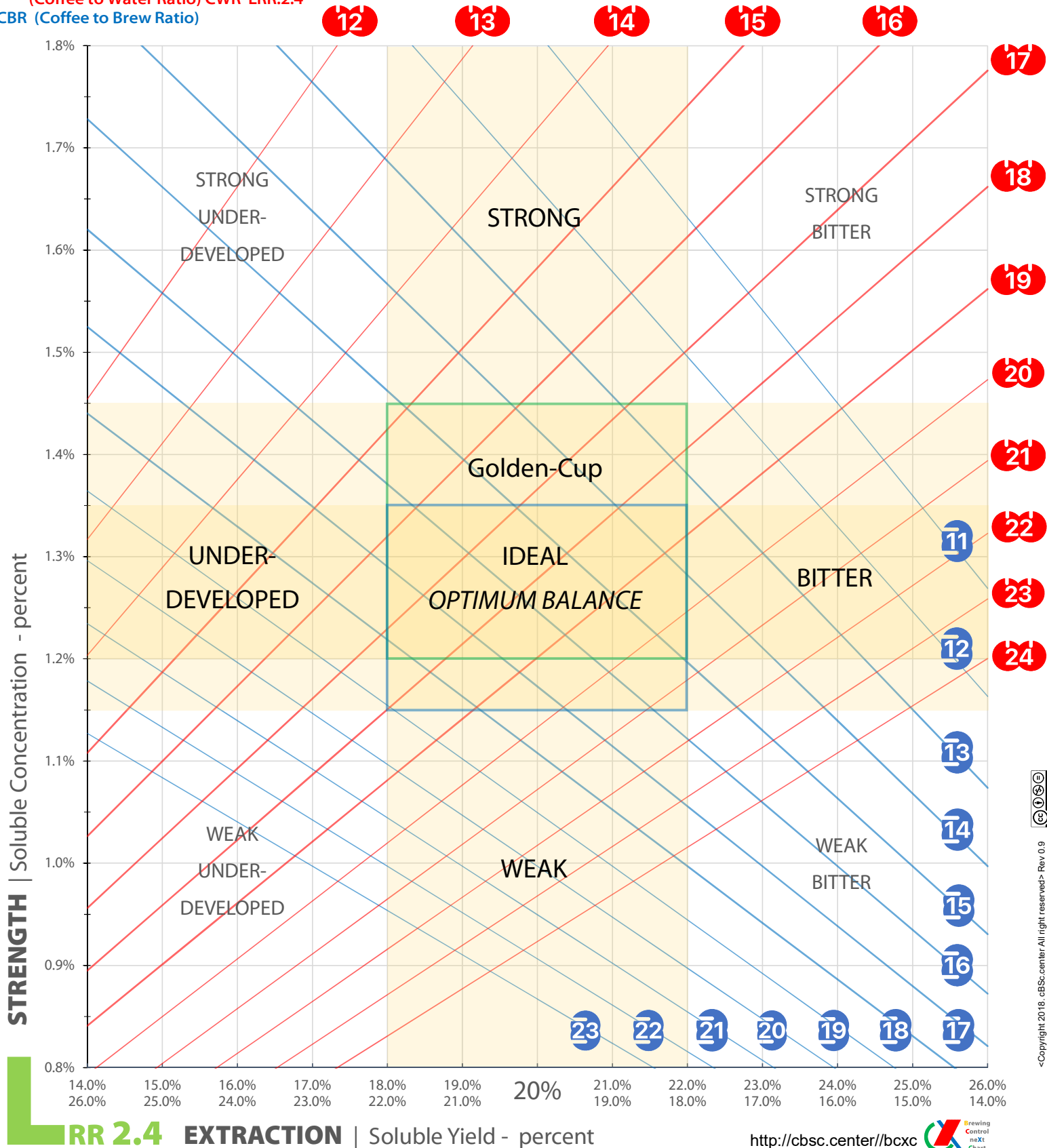


# Brewing Control neXt Chart

Brewing Ratio: **by Weight**

(Coffee to Water Ratio) CWR LRR:2.4

CBR (Coffee to Brew Ratio)



**RR 2.4 EXTRACTION** | Soluble Yield - percent

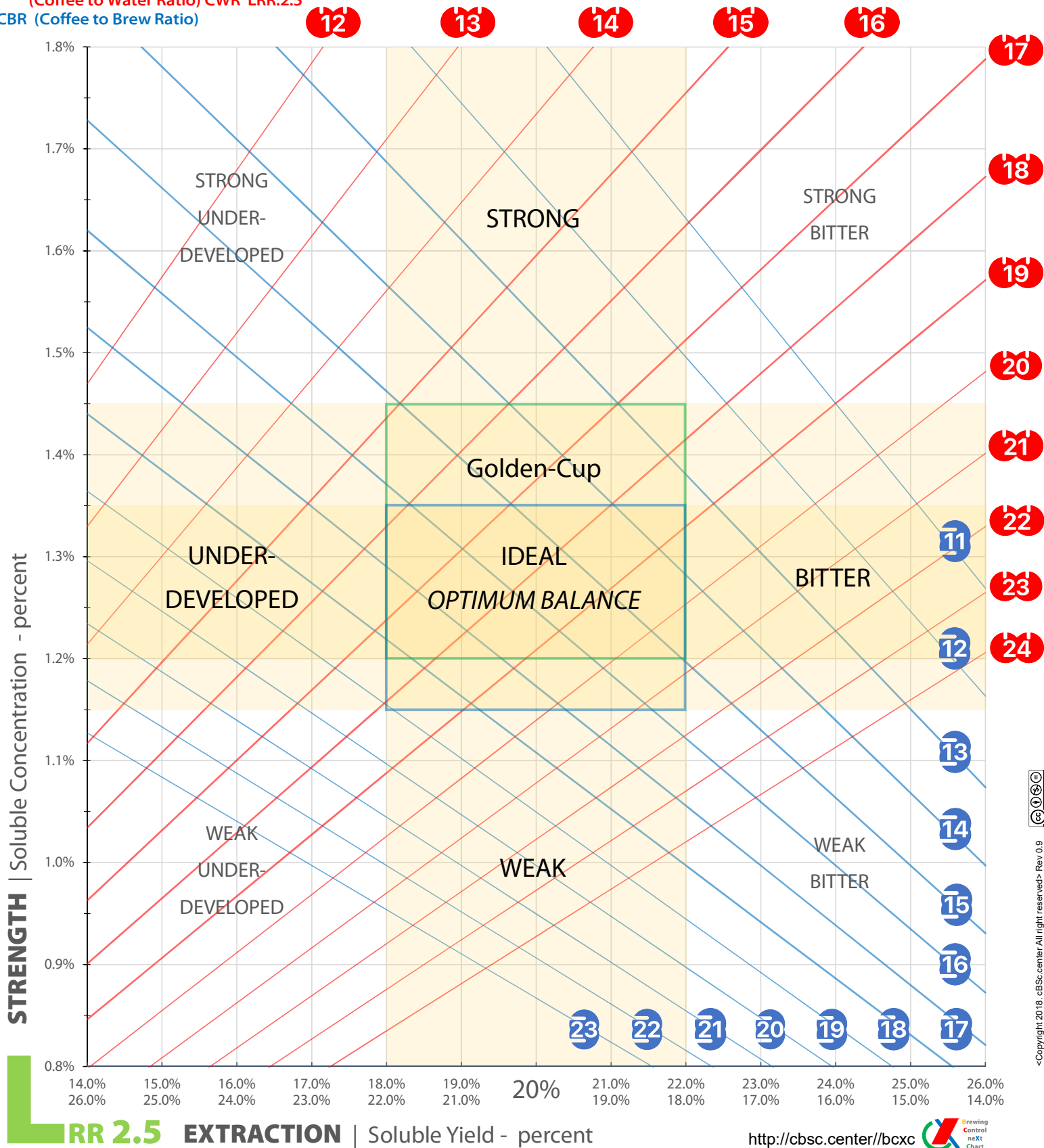
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# Brewing Control neXt Chart

Brewing Ratio: by Weight

(Coffee to Water Ratio) CWR LRR:2.5

CBR (Coffee to Brew Ratio)



**STRENGTH** | Soluble Concentration - percent

**RR 2.5 EXTRACTION** | Soluble Yield - percent

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