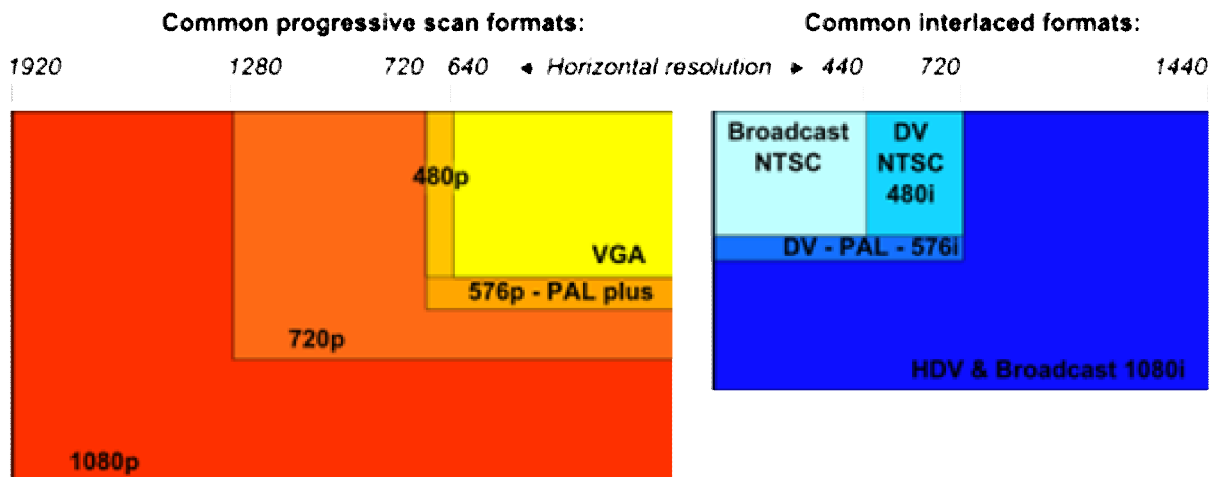


## DV, HDV, HR-1 Quality Comparison

Comparing the technology used in DV and High Definition Video is an almost unfair comparison of apples to oranges. After all, HDV offers resolutions up to 4.5 times larger than DV with HDV's most common resolutions being 1920x1080 and 1280x720 (16:9 aspect ratio), versus DV's 720x480 (4:3 aspect ratio).



The DV codec uses strictly an intraframe (spatial) scheme, whereas HDV uses the well-established MPEG 2 video codec. MPEG-2 applies both intraframe (spatial) and interframe (temporal) to video-compression. This allows HDV to achieve its higher spatial resolution at the target bitrate of 19 Mbit/sec and 25 Mbit/sec.

MPEG-2 video enables HDV to achieve a much higher compression ratio than DV, but at the cost of motion-induced artifacts in scenes of complex motion. The artifacts are a limitation of the compression technology and bitrate allocated to the video bitstream. Nevertheless, HDV is truly stunning on HD displays and cinemas. DV tends to look fuzzy when scaled up to HD resolutions, therefore most viewers accept HDV's visual artifacts in exchange for a significantly more detailed picture.



DV at 720x480 (16:9 ratio for comparison purposes)



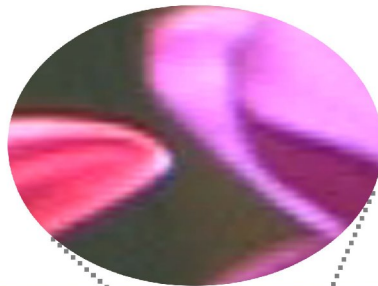
HDV at 1920x1080 (standard 16:9 ratio)

About the only major similarity between DV and HDV is the fact that they share the same physical storage medium, 60 minute MiniDV cassettes (tape). This point then brings us onto our more interesting next comparison.

## HDV vs. the HR-1

Likely you are already working with HD equipment and are looking not only for a more efficient way to manage your media, but to do so while getting the highest possible quality out of your HD camera. The Wafian HR-1 is the answer to both. As noted above, some of HDV's limitations are related to the introduction of block artifacts (noise) through DCT compression when recording to tape. The HR-1 uses the Cineform Intermediate format instead, which uses a full-frame temporal Wavelet transform to avoid loss of quality in your images.

The HR-1 records using 4:2:2 chroma sub-sampling, versus HDV's 4:2:0. As illustrated below, this means a substantial difference in the color detail of your images.



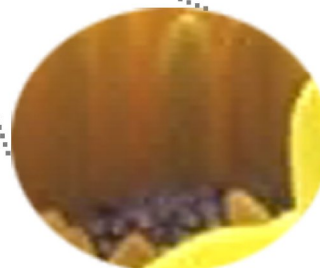
**HDV at 1920x1080**

**(4:2:0 color space)**

**Loss of detail and sharpness on the edges creates a soft image**



**Due to the compression technique in HDV, pixel information is lost, which affects both texture and color depth. This information loss results in flattened colors.**





## HDV at 1920x1080

(4:2:2 color space)

More information provides greater detail in your footage. The HR-1 preserves sharpness on the edges resulting in a visually stunning image.



The additional color and light details recorded using the HR-1 preserve the depth and texture of each petal



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