This ImageJ macro reassigns the background colors to (0,0,0) for all tif images within a directory. The background must be a low-saturation color, such as gray, the foreground images must be relatively high in saturation, and light conditions must be uniform. A dialog box appears to ask the location of the directory of apple images. The macro requires the plugins "Color Space Converter" and "Image Calculator Plus," both of which are available at http://rsbweb.nih.gov/ij/plugins/index.html. To change the threshold values for apple isolation from the background, simply change the values in the changeValues() function below. The default threshold is a saturation level of 0.40/1.0. All values below 0.40 are assigned a value of (0,0,0), while all values above 0.40 retain their original values. The macro was developed to isolate apple images (high-saturation) from a neutral (low-saturation) background but could be used for any image isolation with similar requirements.

```
macro "Apple Image Isolator" {
    dir = getDirectory("Choose a source directory that contains apple images");
    list = getFileList(dir);
    setBatchMode(true);
    for (i=0; i<list.length; i++) {
        path = dir+list[i];
        open(path);
        rename("img1");

        run("Stack to RGB");
        run("Color Space Converter", "from=RGB to=HSB white=D65 separate");
        close();
        changeValues(0, 0.40, 0);
        changeValues(0.1,1,1);
        rename("img2");
        imageCalculator("Multiply create stack", "img1","img2");

        dotIndex = lastIndexOf(path, ".");
        if (dotIndex!=-1)
            path = substring(path, 0, dotIndex); // remove extension to create uncluttered file name
        saveAs("Tiff", path+"clipped");
        close();
        close();
        close();
        close();
    }
}
```