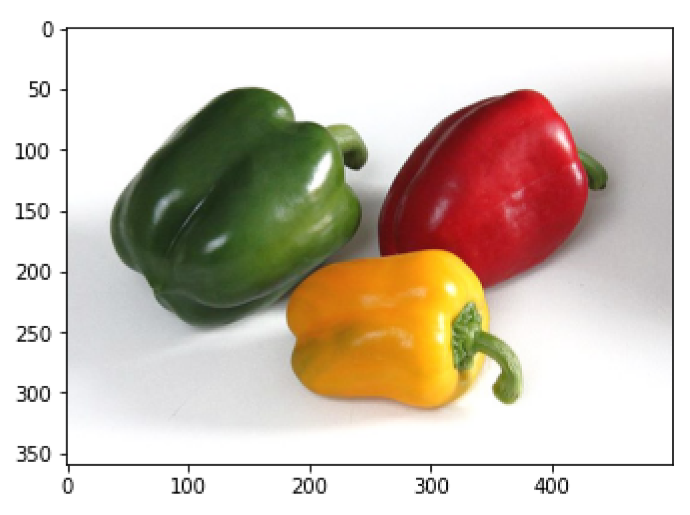
In [3]:
```python
%matplotlib
%matplotlib inline

import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt
```

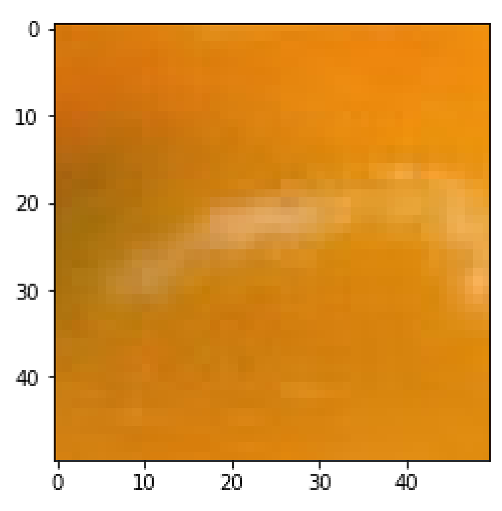
```
Using matplotlib backend: agg
```

In [4]:
```python
img_color = cv.imread('pimiento_morron.jpg')
imgRGB = cv.cvtColor(img_color, cv.COLOR_BGR2RGB)

plt.figure(1)
plt.imshow(imgRGB)
plt.show()
```



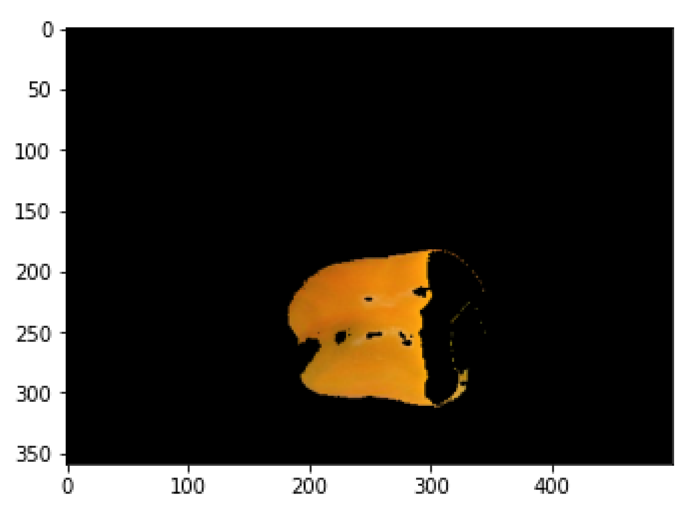
Amarillo

In [8]:
```python
img_muestra = imgRGB[230:280,230:280,:]
plt.figure(2)
plt.imshow(img_muestra)
plt.show()

color_mean, color_std = cv.meanStdDev(img_muestra)

print(color_mean.flatten().tolist())
print(color_std.flatten().tolist())
```

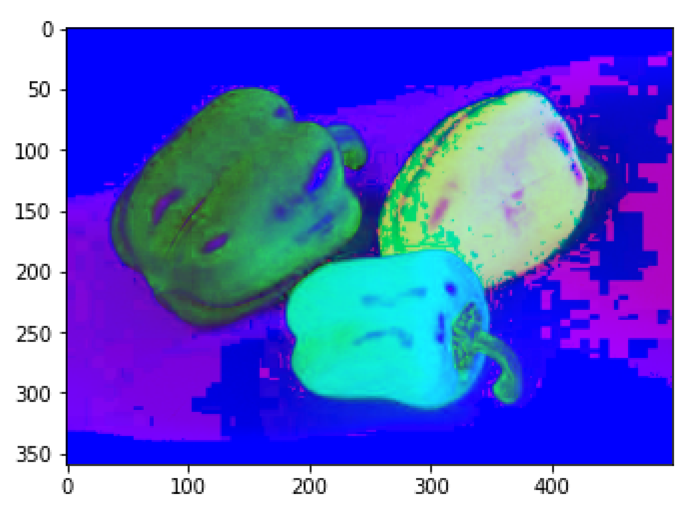



```
[213.66680000000002, 132.0984, 21.5452]
[16.6917398062632, 12.948695588359449, 15.321121269672139]
```

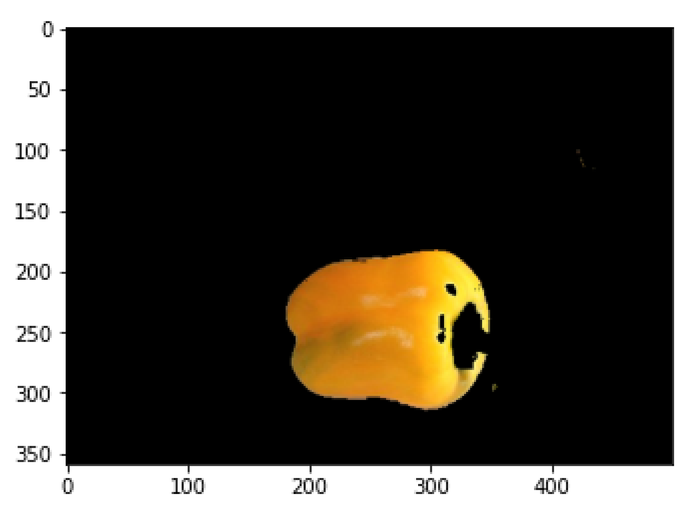
In [9]:
```python
mask = cv.inRange(imgRGB, color_mean-color_std*3,  color_mean+color_std*3)
img_segmentada = cv.bitwise_and(imgRGB, imgRGB, mask=mask)

plt.figure(3)
plt.imshow(img_segmentada)
plt.show()
```



In [63]:
```python
img_HSV = cv.cvtColor(img_color, cv.COLOR_BGR2HSV)
plt.figure(5)
plt.imshow(img_HSV)

img_muestra_hsv = img_HSV[230:280,230:280,:]

color_mean = cv.mean(img_muestra_hsv)
```

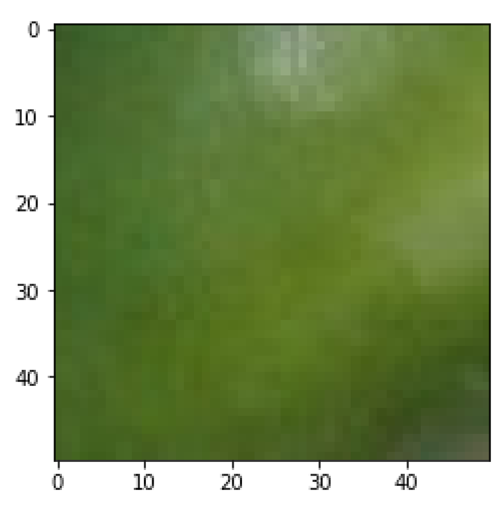


In [46]:
```python
color_l = (14,100,100)
color_u = (28,255,255)

mask = cv.inRange(img_HSV, color_l,  color_u)
img_segmentada = cv.bitwise_and(imgRGB, imgRGB, mask=mask)

plt.figure(6)
plt.imshow(img_segmentada)
plt.show()
```



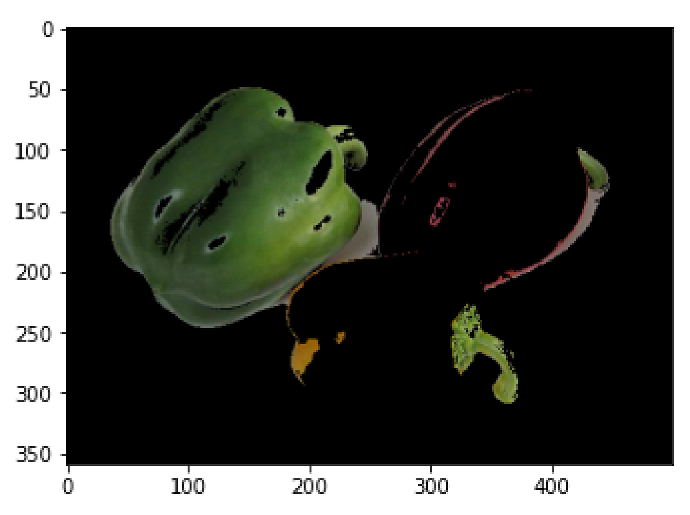
Verde

In [15]:
```python
img_muestra = imgRGB[150:200,150:200,:]
plt.figure(2)
plt.imshow(img_muestra)
plt.show()

color_mean, color_std = cv.meanStdDev(img_muestra)

print(color_mean.flatten().tolist())
print(color_std.flatten().tolist())
```




```
[87.884, 115.4184, 46.4048]
[17.933302651770536, 16.589760138109252, 18.384780035670808]
```

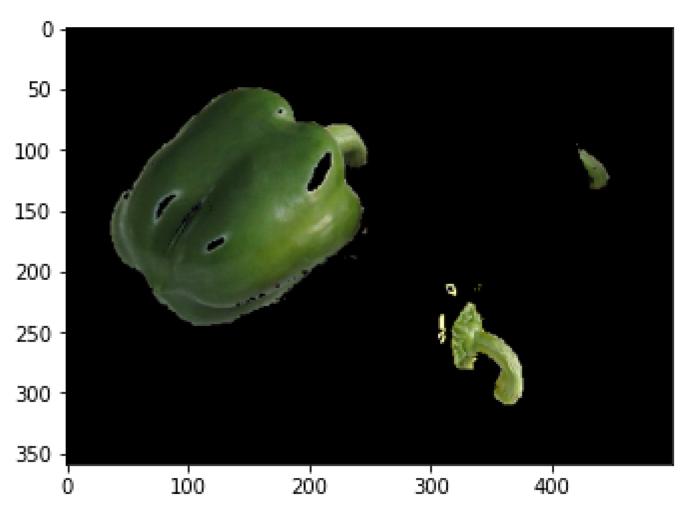
In [17]:
```python
mask = cv.inRange(imgRGB, color_mean-color_std*4,  color_mean+color_std*4)
img_segmentada = cv.bitwise_and(imgRGB, imgRGB, mask=mask)

plt.figure(3)
plt.imshow(img_segmentada)
plt.show()
```



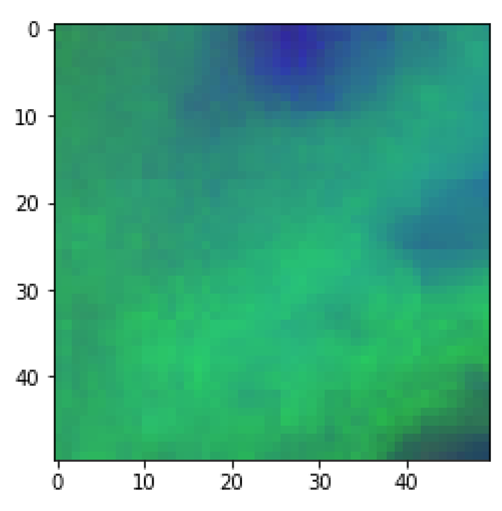
In [77]:
```python
# Cómo puedo segmentar el amarillo ?
print(img_HSV[230,250,:])
```

```
[ 17 223 228]
```

In [90]:
```python
color_l = (29,35,40)
color_u = (140,255,255)

mask = cv.inRange(img_HSV, color_l,  color_u)
img_segmentada = cv.bitwise_and(imgRGB, imgRGB, mask=mask)

plt.figure(6)
plt.imshow(img_segmentada)
plt.show()
```



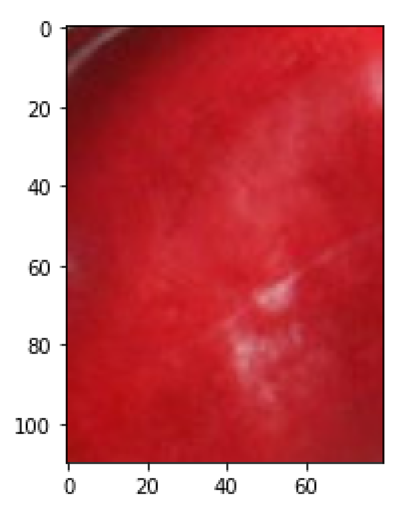
In [66]:
```python
img_muestra = img_HSV[150:200,150:200,:]
plt.figure(2)
plt.imshow(img_muestra)
plt.show()

color_mean, color_std = cv.meanStdDev(img_muestra)

print(color_mean.flatten().tolist())
print(color_std.flatten().tolist())
```




```
[42.3188, 154.44840000000002, 115.4184]
[2.9350922574937757, 27.711184338457883, 16.589760138109252]
```

Rojo

In [40]:
```python
img_muestra = imgRGB[70:180,320:400,:]
plt.figure(2)
plt.imshow(img_muestra)
plt.show()

color_mean, color_std = cv.meanStdDev(img_muestra)

print(color_mean.flatten().tolist())
print(color_std.flatten().tolist())
```




```
[181.9971590909091, 32.529545454545456, 40.27852272727273]
[24.92635272379526, 15.228368854713443, 16.085313532972513]
```

In [44]:
```python
mask = cv.inRange(imgRGB, color_mean-color_std*4,  color_mean+color_std*3)
img_segmentada = cv.bitwise_and(imgRGB, imgRGB, mask=mask)
plt.figure(3)
plt.imshow(img_segmentada)
plt.show()
```