Arduino Code

```
#include <AccelStepper.h>


AccelStepper stepperX(AccelStepper::DRIVER, 3, 2);


const int button_pin = 4;

const int switch_pin = 7;

int red_LED_pin= 11;

int green_LED_pin = 10;

int blue_LED_pin = 9;


//The flow rate we set

float mlFlowRate = 100;

int minFlowRate = 1;

//other constants

float rodPitch = 8;

float stepsPerRev = 200;

float bigS= 0.2717163486; // cross sectional area of big syringe

float smallS=  0.1038689; //cross sectional area of small syringe
```

```
float flowRate = mlFlowRate/minFlowRate;

float spd= flowRate*0.01666/(rodPitch/stepsPerRev*bigS);




void setup() {

   Serial.begin(9600);

  delay(1000);

  Serial.print("spd = ");

     Serial.println(spd);

     Serial.println(" steps/sec");

  pinMode(button_pin, INPUT_PULLUP);

  pinMode(red_LED_pin, OUTPUT);

  pinMode(green_LED_pin, OUTPUT);

  pinMode(blue_LED_pin, OUTPUT);

  pinMode(switch_pin, INPUT_PULLUP);

  stepperX.setMaxSpeed(1000);

  stepperX.setSpeed(spd);


}
```

```
void RGB_color(int red_light_value, int green_light_value, int blue_light_value)
{
analogWrite(red_LED_pin, red_light_value);
analogWrite(green_LED_pin, green_light_value);
analogWrite(blue_LED_pin, blue_light_value);
}

void loop(){
  if (digitalRead(button_pin)==LOW and digitalRead(switch_pin)==HIGH){
     stepperX.runSpeed();
     RGB_color(0,255,0);}
  else if (digitalRead(button_pin)==HIGH and digitalRead(switch_pin)==HIGH) {
     RGB_color(255,75,0);}
  else if (digitalRead(switch_pin)==LOW){
     RGB_color(255,0,0);}
  }
  }
```