

Mechanical Measures Taken for Weed Control in the Mechanical Harvest of Bell Peppers. Adalia M. Cajias - CSU Chico Undergrad CWSS 2016 Scholarship Recipient

Mechanical harvest of processing Bell Peppers is growing operation that is being used in all areas of California. Through my experiences in mechanical harvest there has been some complications with encountering invasive weeds in my harvest ready pepper field. One specific field was covered in a blanket of Black Nightshade (*Solanum nigrum*) and had speckles of Jimson Weed (*Datura stramonium*) throughout the field. Through my first summer of three of my internship I recognized a huge issue of the invasive weeds slowing down harvest time, yield and quality of the crop. These invasive weeds would bind of the machine and would need to be pulled out every 15 minutes of operation. The harvesters do not have an issue up taking the weeds if they are taken in directly in the middle of the mouth of the machine but in my experiences, many of the weeds grew on the sides of the beds or in the furrows and would get caught in the sides of the mouth of the machine. The weeds getting caught would cause damage to the fruit and stop the machine and would be slowing down the harvest. Through this observation and experience of removing the weeds binding up the machine I knew change must be done. Over these next two years after this first summer I sat down with my boss and hired in help in the construction of our new harvest machines and we incorporated new additions on the machine to help with this issue. We created guard wheels on the mouth of the machine and added blades to it as well. It is a similar concept to a vine trainer for a tomato field. These additions included blades on the mouth of the harvester and rollers on the front of the machine to gather the plants and weeds into the middle. Over the three summers with the company I helped with the engineer of the additions on the equipment. My experiences of my time spent in the field were valued and incorporated. The additions showed a great success and were fully operational in the third summer I worked. The additions were incorporated on Pik Rite harvesters and Johnson tomato harvesters that were converted to harvest bell peppers.