Introduction

The provinces of Leon and Chinandega located in the pacific zone of Nicaragua are mainly agricultural areas. The chief crop since 1980 has been corn, which produce an average of 1 ton per acre. However, this average has been going down in the last 3 years because of the scarcity of chemical compounds to control weeds. These weeds growing in vigorous competition with crop corn constituting a serious problem for the corn production in this area.

The high weed populations in Nicaragua as most of the tropical countries is because of climatic and cultural conditions that favor active plant growth and often the production of more than one generation of weeds annually. These weeds are able to compete with the crop for space, which is composite, for all resources necessary for growth, as well as their interaction. Weeds also compete with the crop by faster and higher growth, large leaves and climbing devices. Therefore, species with one or all these strategies can be considered as strong competitors for light to the crop. Naturally competition for light begins at the moments when plants begin to shade each other. Moreover, as the different crops different weed species show great differences in their susceptibility to shading. Especially in the early phases when there is still no light interception for nutrients, especially nitrogen, which can not be supplemented as fast as it is taken, up by fast growing weeds. In addition many weed species show about the same develop as the crop and therefore about the same course of nutrients...
requierements. Finally, weeds car, compete for water the proliferous growth of weeds, especially perennial ones such the tropical weed Cyperus rotundus, severely limit the availability of water to the crops. There are also weeds with a root system well-developed that permit them to get water more efficient than the crop. On the other hand, the amount of weeds competition to a crop depends on the crop, the weed species forming the weed community and their densities, the climate, the soil, and so on.

For all the foregoing is practically irnpossible to keep the crop with weed, but we do not for this particular locality which is the yield losses caused by weeds, we also do not when, during the crop growth the competition, is stronger. Therefore, to try to help the corn, producer in this problem, I have decided to make a field experiment to know what is the yield losses when weeds are not removed and I also want to know when is the critical period of weed competition, because in that way I will be able to suggest when is more important to remove the weeds using the little quirnical compounds that they have.

Method

This experiment have to be done between may 15 and august 15 on areas whith average ecological factors in the corn field of Leon and Chinandega. The study area will be of 6 ha. The habitat is agricultural land whith an annual rainfall of 1600 mm of which falls between may to octuber. I will do plot of 4 corn row by 10 m long. Considering that corn crop in this area is ready to harvest in 90 days. I will do 10 plots, plot 1 with weed control, plot 2 without weed control, plot 3 without weed control the first 10 days, plot 4 without weed control the first 20 days and so on. I will also repeat the same experiment on 2 more different places in the total area.

The weeds will be removed with their roots from the corn crop handlly in the early part of the growing season, after weeds are large using hoes or sharp knives to sever weeds at the soil surface. When weeds be very small I will use an application of contact-type herbicide. The harvest will be handly to prevent
injuries that may be caused by the mechanical equipment.

Interpretation of data

Interpretation of data will be on basis of the harvest, comparing the plot with weed control and the plot without weed control, I can determine tric total losses caused by the weeds, and by means of an analysis of variance between plot 1 and the other treatment, I can determine which one of them have more degree of freedom and therefore to know when the critical period of weeds competition is for this crop in this particular area.

Expected results.

The expected results are that on plot 1 the crop grow will be very well and will have the higher yield, plot 2 of course will have the lower yield because the will be all the time growing in competition with weeds, plots 3 and 4 probably will not have a big difference with plot 1, this because at the beginning the root-system in both crop and weeds is not well-developed, therefore competition for water or nutrients is not so high and also because they still do not shade each other, plots 5, 6, 7, will probably have a decline on the yield because in this period the weeds as the crop are in the growing, flowering, and fructing stages, therefore they need to use a lot of the resources, so the competition occurs, plots 8, 9, 10, will not have significant difference with plot 1 because in this period the plants are in the ripeness proces and they do not need to compete for the resources.

Discussion of the significance of this work.

This work will be important because it will be a practical way to show to the farmers, administrators, etc, how much the weeds can decrease the yield of corn, it will also be in practice usefull to know when the best time to apply the chemical compounds, mainly when the farmers or whoever does not have enough of them.

This experiment will measure competition between crop and weed population in gross way but it will not show the competitive
relationship between crop and each species of weeds, however sometimes is important to know the competition for species because perhaps the farmers apply chemical compounds to kill weeds that are not too nocives for the crop.

Finally, I want to say that even when this experiment will not show everything, it will show when weed control must be implemented to achieve maximum returns from the corn crop in that particular area.