

## A PROJECT ON TOBACCO

### A PRODUCT DECREASING AMOUNTS OF NITROSAMINE IN TOBACCO

Prof. Dr. Ömer GEZEREL  
University of Cukurova  
Dept. of Agriculture  
Adana -TURKEY  
e-mail: [gezerel@gmail.com](mailto:gezerel@gmail.com)

This invention relates to the production of a new product, which decreases harmful substances such as nitrosamine from tobacco.

The **natural product** is initially applied on tobacco leaf (burley tobacco) during the cigarette production process. Our product is sprinkled on the leaf. The sprinkled leaf tobacco is reacting with steam on rolling band normally generated by every tobacco factory and then it penetrates into the leaf tissue. This penetration regulates the decreasing of total TSNA (*tobacco specific nitrosamine*) such as NNN, NNK etc. and nicotine to certain levels, which actually depends on the concentration of our product. After reaction, the product completes its function and decomposes without any side effect in tobacco quality.

After the reaction, the product completes its function and the product decomposes before burning of tobacco. Thus, there will no residual and/or toxicants on the tobacco. The product is natural- biological (not chemical), thus does not have any residual effect. It has no environmental toxicity on soil, water, plant and animal as well as human beings. It has no phytotoxic effects on honeybees, earthworms, beneficial insects and birds.

As we mentioned the process above, the addition of the product does not create any extra cost to the cigarette production.

**It is absolutely safe for human beings** concerning carcinogenicity, delayed neurotoxicity, teratogenicity and reproduction (on DNA and RNA). The product is abundantly available throughout the world and can be used for the production of other tobacco commodities. Thus, the product is easily obtainable and cheap.

#### CLAIMS

- 1) A product, which decreases the effect of harmful substances in tobacco
- 2) A method relating to the addition of the newly invented product to cigarette production at several phases of the conventional factory working sequence.
- 3) A product, which is totally natural and environmentally friendly.
- 4) A method using the newly invented product, which is totally harmless to human beings.
- 5) A product highly suitable for safe storage with infinite shelf life

## RESULTS

Leaf and cut tobaccos were tested in an accredited laboratory in Europe to show the claims stated above.

Results were clear as shown below. On each treated sample different amount of natural product was used. Nitrosamine and some harmful substances were decreased to trace amount when compare with control samples (leaf and cut tobaccos that are not treated) but trace amount of nicotine was decreased. Thus, taste of tobacco did not change.

## untreated sample (control) (sample 3)

### 2. Chemical Analyses:

Total TSNA (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,75
NNN (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,33
NAT (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,34
NAB (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NNK (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,081

\* value is equal to the limit of quantification

## treated sample (sample 9)

### 2. Chemical Analyses:

Total TSNA (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,12
NNN (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,056
NAT (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,063
NAB (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NNK (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*

\* value is equal to the limit of quantification

## treated sample (sample 7)

Total TSNA (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,19
NNN (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,092
NAT (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	0,095
NAB (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NNK (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*

\* value is equal to the limit of quantification

## treated sample (sample 5)

Total TSNA (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NNN (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NAT (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NAB (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*
NNK (mg/kg): (Method: LC-MS/MS; carried out by external laboratory)	< 0,05*

\* value is equal to the limit of quantification