Idaho State Police
Forensic Services

TOXICOLOGY PROGRAM TRENDS
(1998-2001)

Director E.D. Strickfaden

Idaho State Police

Service since 1939

Governor Dirk Kempthorne

MEMORANDUM

TO: Ralph Powell, Major
Bob Martin, Laboratory Manager
Rachel Farnsworth, Laboratory Manager

FROM: Don Wyckoff, Laboratory Manager

DATE: November 26, 2001

SUBJECT: Trends in the Toxicology Program (1998-2001)

Overview

Since 1996 the laboratory has been analyzing toxicology samples related to the NJDT/DRE program. Initially, we were unsure as to what statistics or information to keep and how to compare such over the life of the program. After a number of changes and "restarts," it is hoped that the information we are now collecting will provide guidance to the program as well as to the agencies from which we receive samples.

The information included herein is neither complete nor complimentary over the entire five-year period. However, we were able to adjust over time to provide more useful information and begin to compare our information with other pertinent data generated by the department (i.e., Crime in Idaho and Gem State Evaluator [DRE] publications). Graphs are not present for all of the groups over the entire time frame; however, during the last three years, generated information is fairly consistent. Realistically there is probably little difference in the samples over the entire time span, but this cannot be known with surety without spending a large amount of time reanalyzing data from the first couple of years.

Figures A and B provide a breakdown of the percentages of representative casework and the number of samples respectively, coming into the laboratories. For the first three years most of all such casework (urine toxicology produced about 94% of all toxicology samples) was handled out of the Pocatello Forensic Laboratory. Evident from the graphs is that the highest percentage of casework is associated with DUID (including DRE samples, as these nearly always involve DUI), juvenile P&P, and other criminal charges.

During the first two years of collecting this information, the toxicology samples increased dramatically. This was due to the number officers trained in the DRE protocols and the emphasis put on DUI apprehension by this program during that time, the emphasis put on

school drug programs, and the collection of samples from victims and suspects in a variety of crimes. The FS predicted such an increase would occur with a subsequent drop-off a few years after initiating the program. This too occurred during the third year. Eventually, it was predicted that the number of samples would begin to increase again and sample numbers will fluctuate over time in association with the number of officers involved in DUI programs, population demographics, what types of samples FS analyzes, and the ability to meet user demands. This also appears to be occurring with our toxicology program at this point in time. Figure C depicts the dynamics of the program changes during this time. (I chose to provide information in this figure prior to the start of the DRE/NJDT program to show the impact on our caseload. Although NJDT samples didn't begin to come in until late 1997, DRE samples were being received in the lab much earlier in that year.)

NJDT Trends

Figures 1 through 4 summarize the results of the NJDT samples since 1998. The number of samples has increased over 100% in just three years as well as the variety of positive drug results. Although there were samples analyzed during FY1997 (6), these are not included. The results of those six samples were four negatives and two positives for marijuana.

Obviously the most abused drug within this age group (10-21 yr. and in public school) is marijuana. What is enlightening, however, is the variety of abuse of other categories of drugs in this age group and the multiple drugs present. There are wide ranges in the percentages of particular samples due to the relative small populations that are being tested. Although the laboratories have received samples from many of the school districts in Idaho, the metropolitan centers (districts associated with cities larger than 25,000) are where 63% of all NJDT samples arise.

Juvenile Trends

Figures 5 through 7 provide the results of all samples from the juvenile population (under 18 yr. and the NJDT samples) since 1999. From the data it is evident that marijuana is the most abused drug detected, with the percentage of the tested population having this present being approximately 50%. Also evident is the expanding number of drug types abused in the entire population compared to a similar age group (NJDTs). Whether school attendance tends to keep abuse down or officer training and experience is better able to detect drug use is unknown.

DRE Trends

Figures 8 through 11 summarize the results of the DRE samples since 1998. The level of officer training and the extensive testing of the subject during the evaluation process result in a greater percentage of positives and a variety of drug combinations that are not seen elsewhere in all submitted samples. Although marijuana is still the drug detected most frequently, drug combinations were detected more frequently in this group, and the percentage of negatives is far lower than elsewhere in the sample types.

During the five year span of the DRE program there have been 1083 DRE evaluations by approximately 114 officers.[1] During this same time period the laboratory analyzed 984 such samples, meaning that 99 samples were "ruled out" sometime prior to submission to the laboratory. Of the negative samples submitted, many were believed to be negative at that time, but were submitted nonetheless, to check evaluation results.

Although the percentage of drug combinations varies widely during the five-year study, it averages about 20% of all DRE casework. There tends to be good correlation in this sample group between what the officer believes is present in the specimen versus the actual laboratory results.

Adult Trends

Figures 12 through 14 depict the results of adult toxicology samples between 1999 and 2001. There is not a lot that can be said about this population sample that has not already been observed in the other sample groups. One noteworthy point is that this population takes in most of the DRE samples and as a result the variety of drug combinations is more significant in this sample group.

Overall Trends

The totaling of all population groups is depicted in Figures 15 through 20. In Figures 15 through 17 the drug groups are broken out just to show the variety. In Figures 18 through 20 this information is further compartmentalized just to show the percentage of negatives, single drugs positive samples, and the multiple drug positive samples. Some general trends that were noticed in putting together this data are the following: 1) as the age of the sample population increases, use of marijuana only becomes a smaller percentage of the population; 2) over the time span approximately 30% of the samples received are negative; 3) abuse of drugs in combination appears to be on the rise; and 4) stimulant abuse in the population is at least as widespread as marijuana use.

Summary

It has taken some time to begin to get relevant numbers for the program but it is hoped that what we are presently using is meaningful to our program and other State operations.

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[1] Gem State Evaluator, Vol. 3, No. 1, March 2001.

There are some categories that may need to be tracked that we are not doing (e.g., accident fatalities) and we will be trying to retrieve this information as time goes on.

I hope this is beneficial to you. If you have any questions, please feel free to give me a call. Thanks.

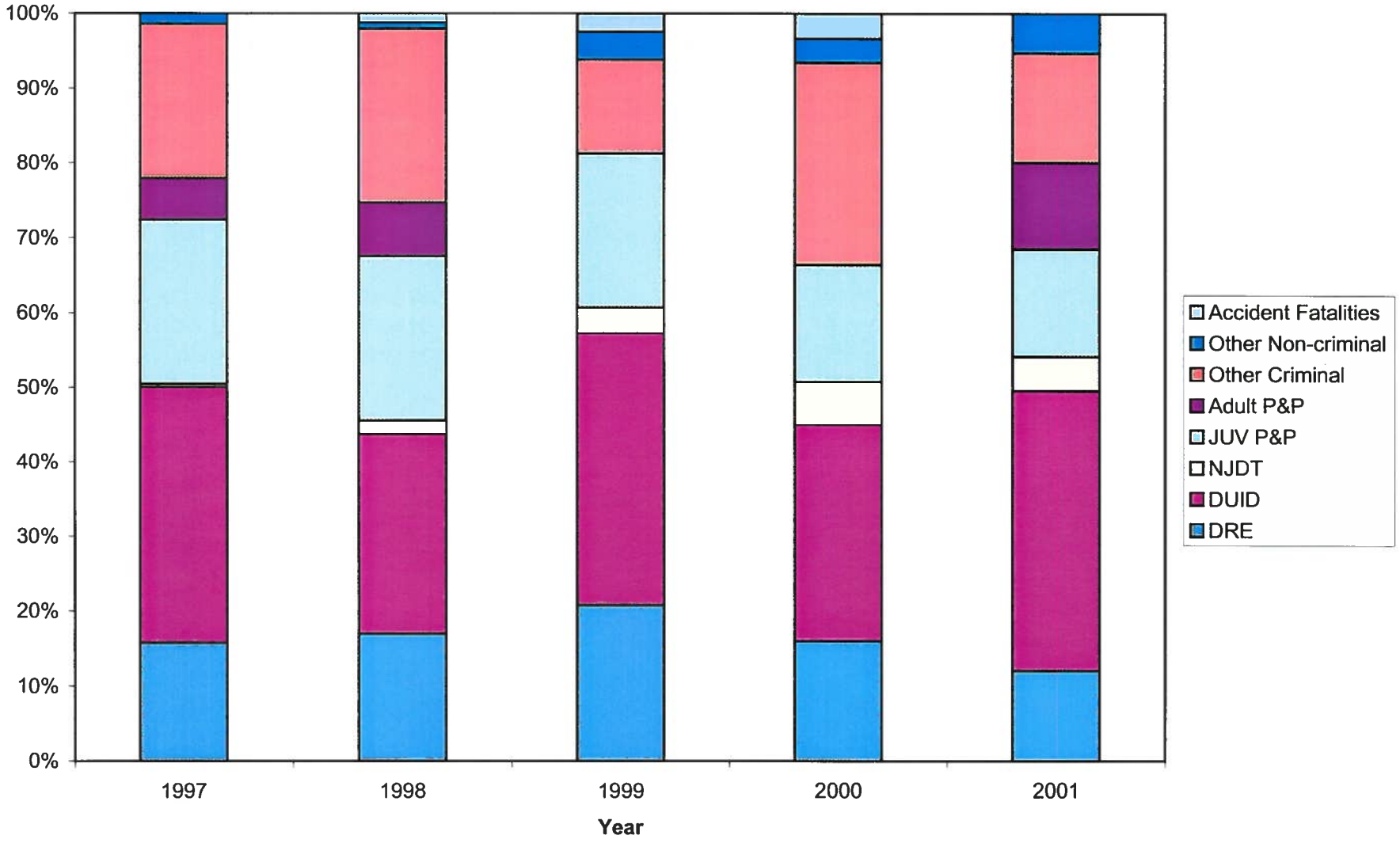

Figure A: TOXICOLOGY CASES BY TYPE 1997-2001

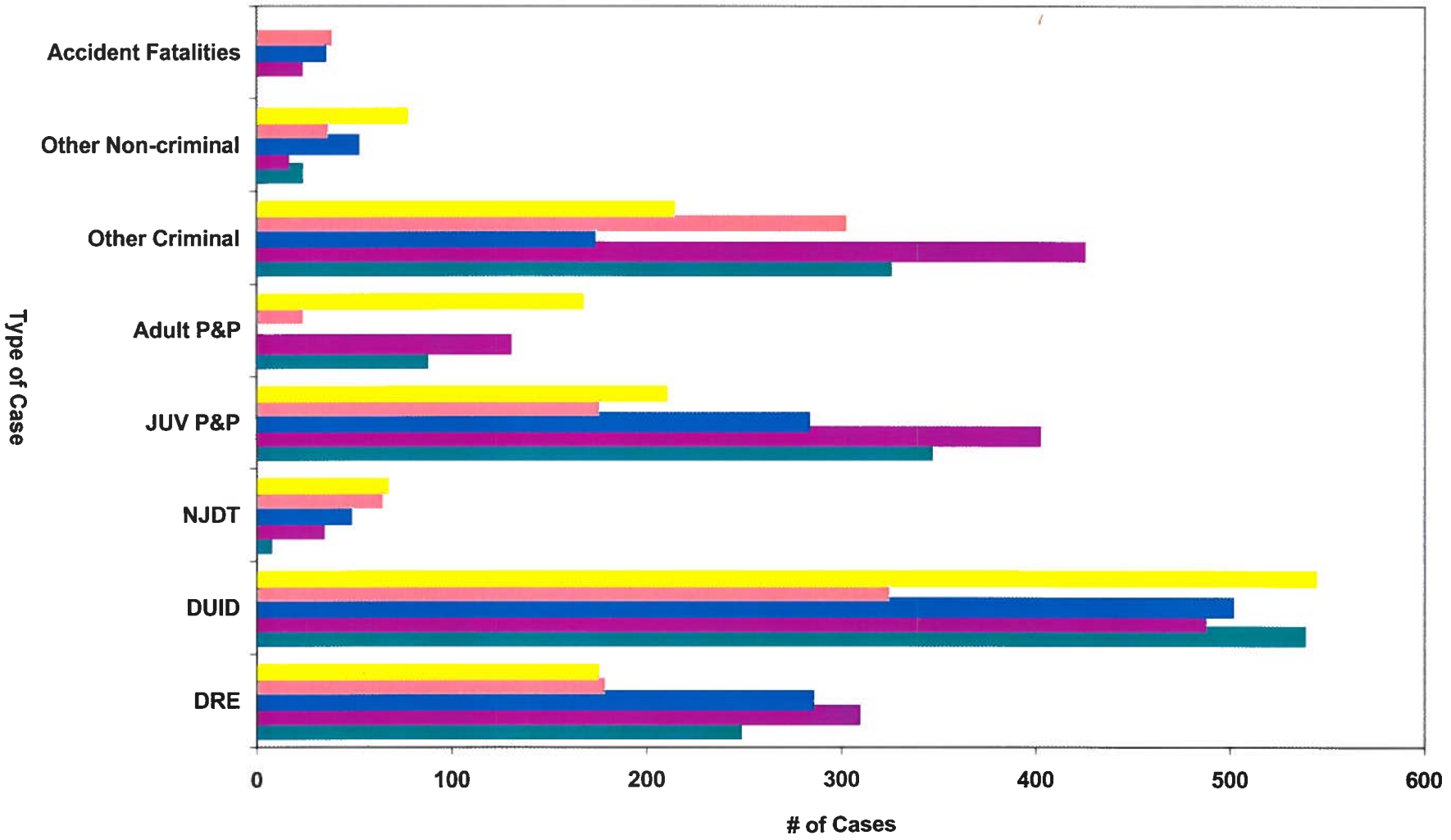

Figure B: **Toxicology Cases By Type 1997-2001**

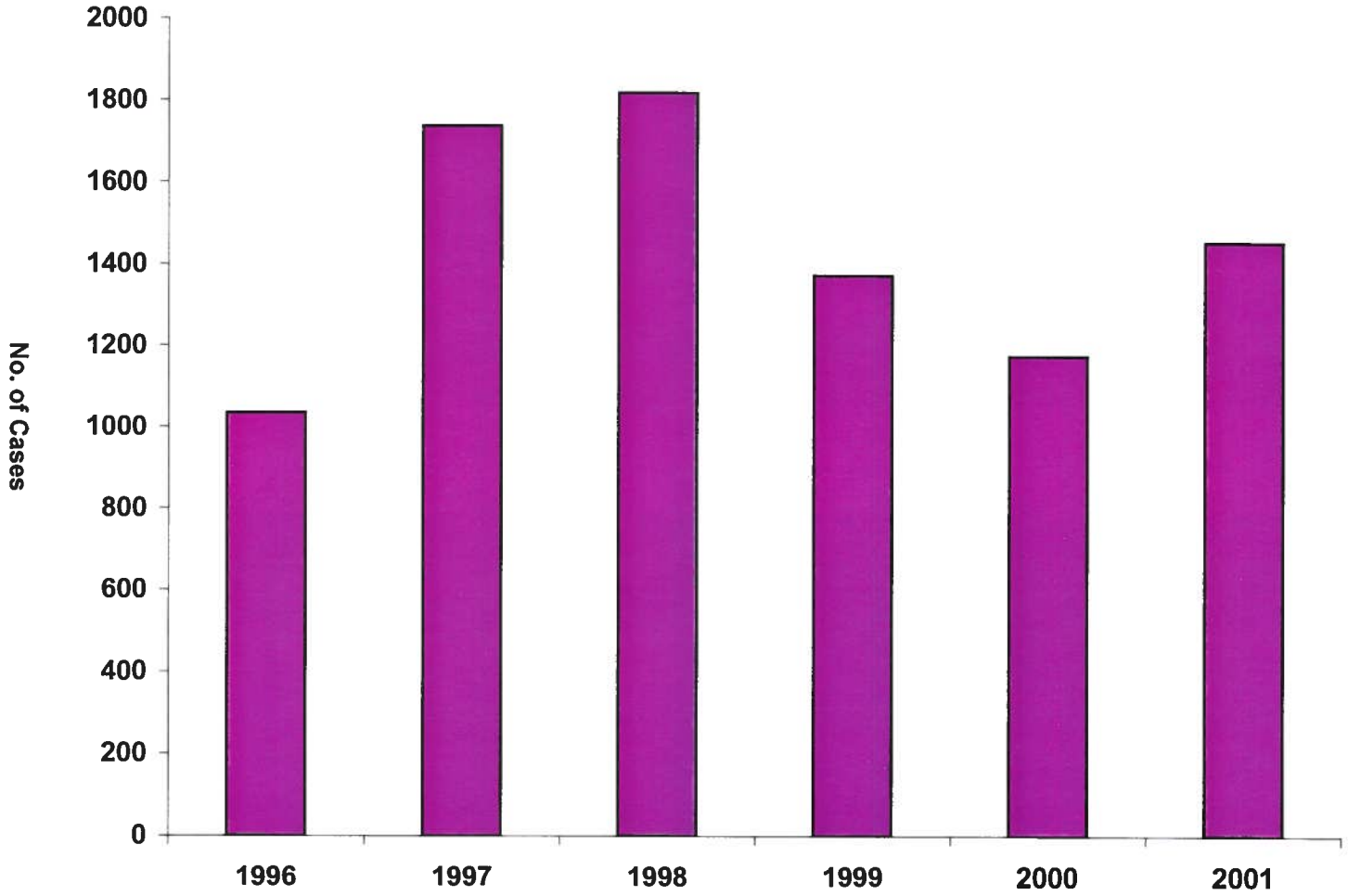

Figure C: TOTAL TOXICOLOGY SAMPLES SUBMITTED BY YEAR

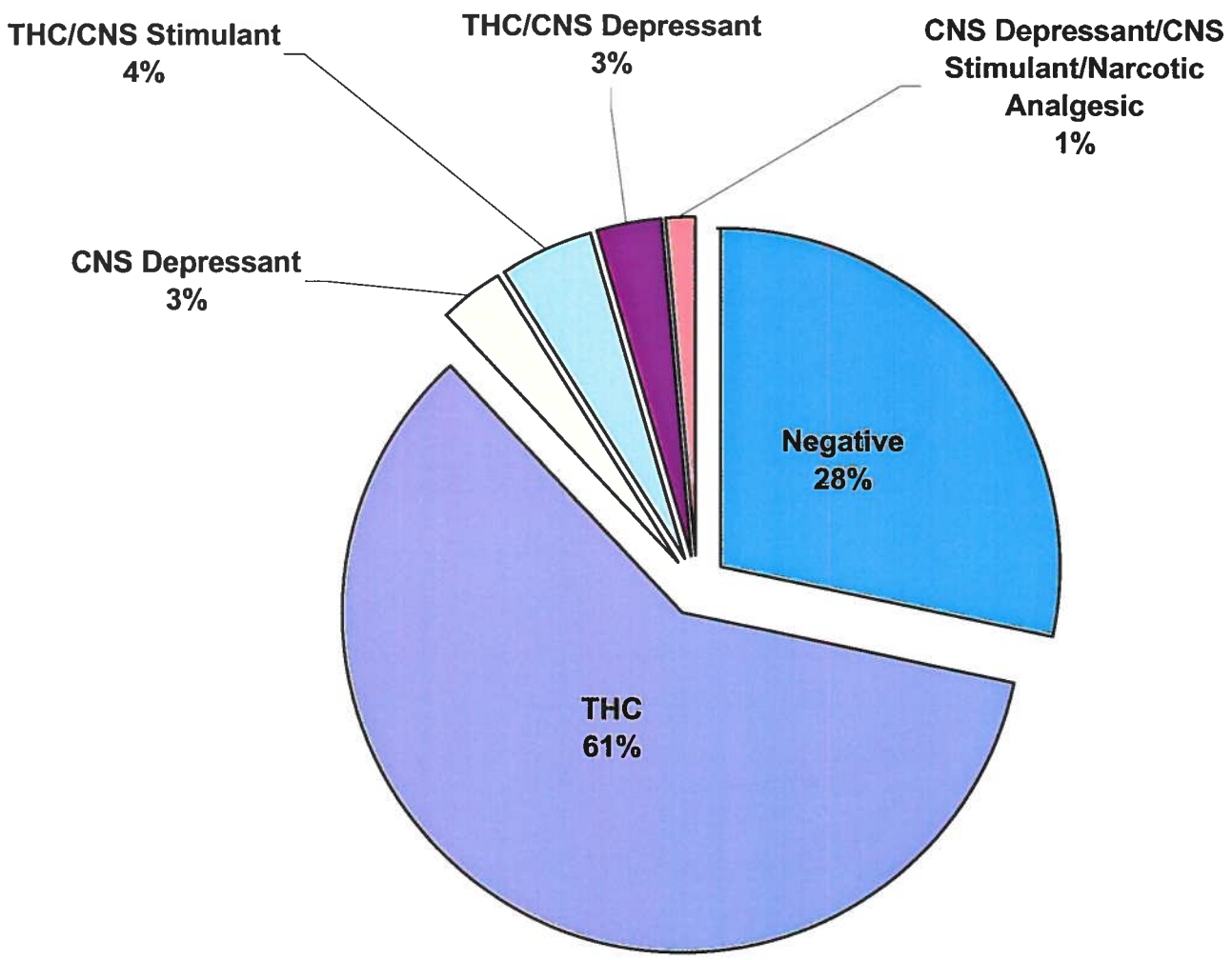

Figure 1: NJDT Sample Results FY 2001

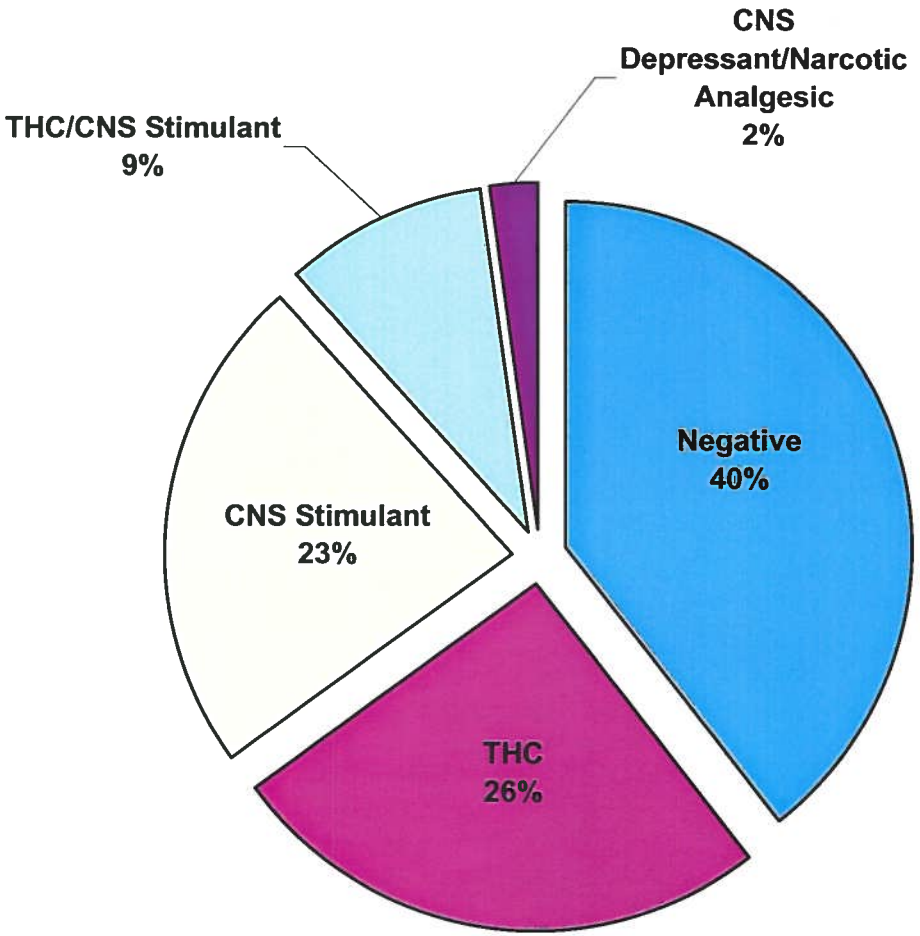

Figure 2: NJDT Sample Results FY 2000

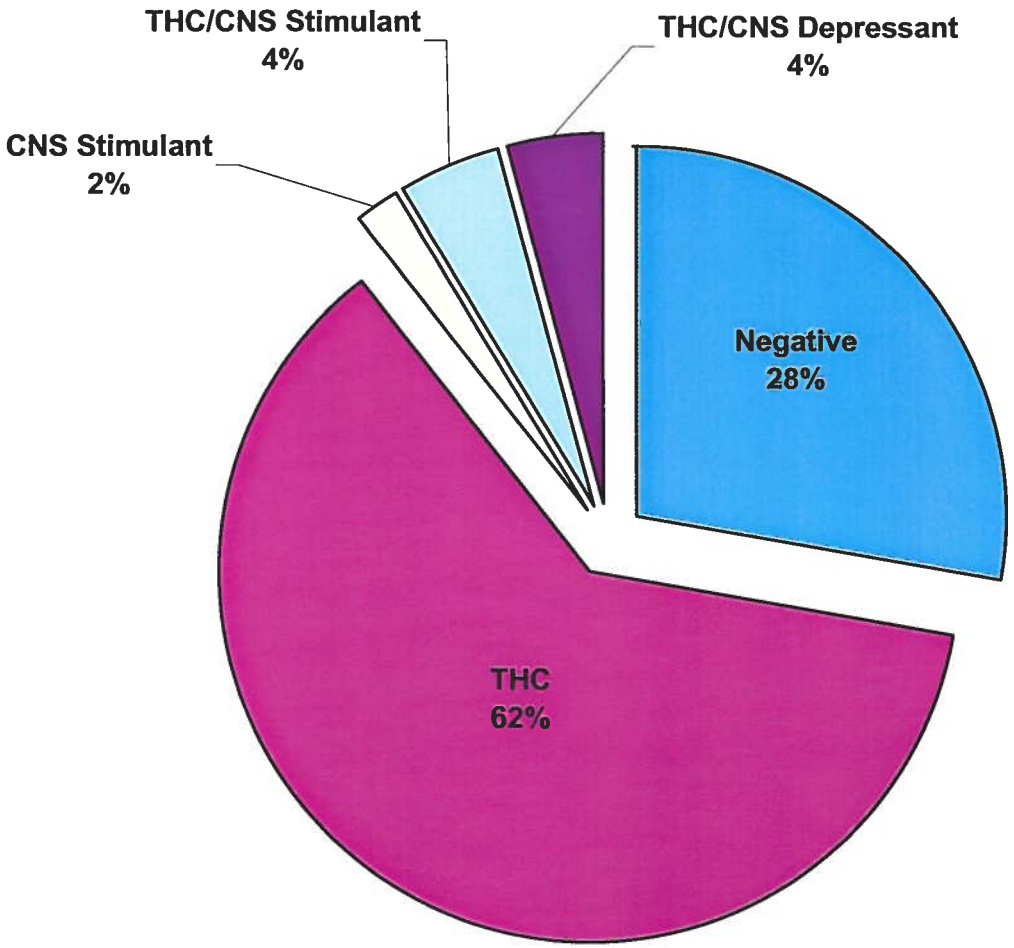

Figure 3: **NJDT Sample Results FY 1999**

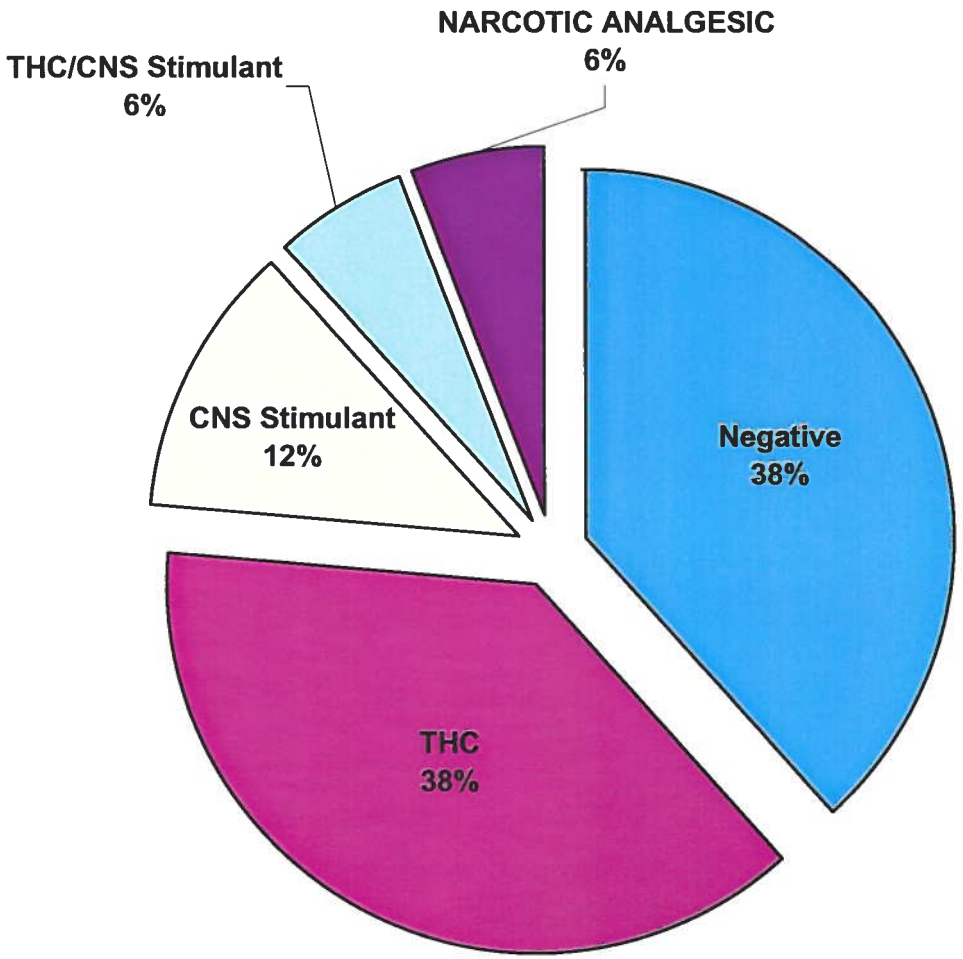

Figure 4: NJDT Sample Results FY 1998

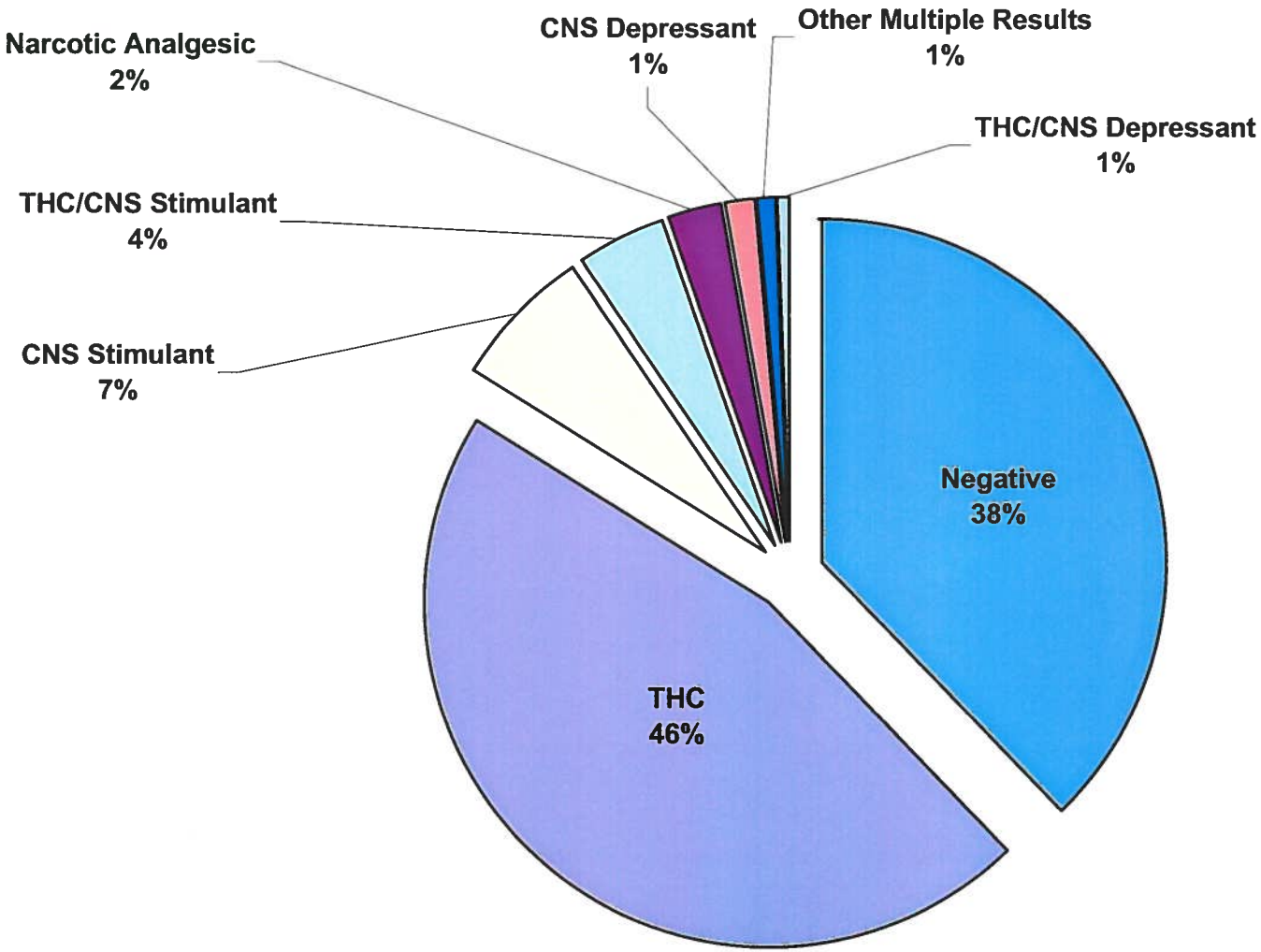

Figure 5: **Juvenile Sample Results FY 2001**

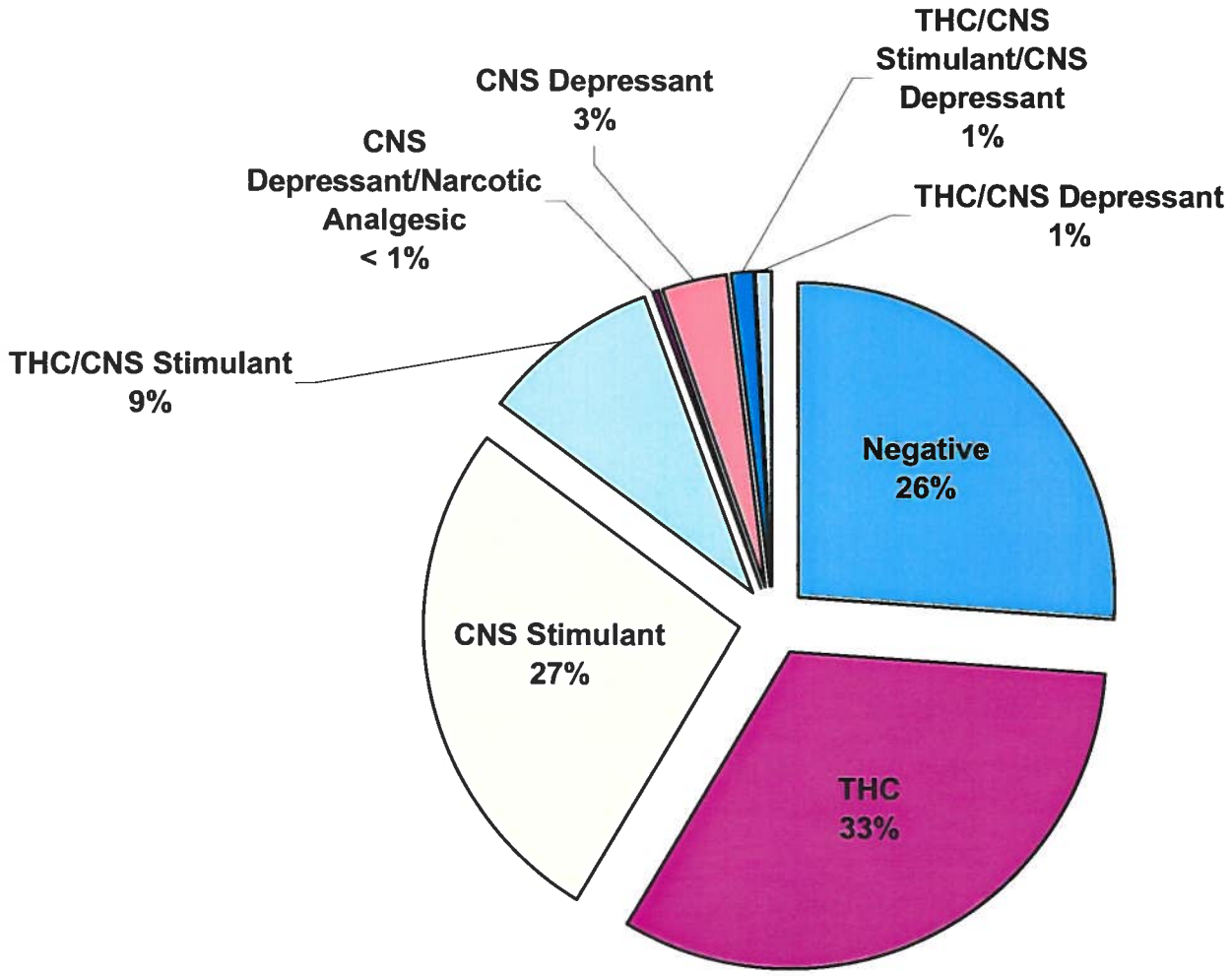

Figure 6: **Juvenile Sample Results FY 2000**

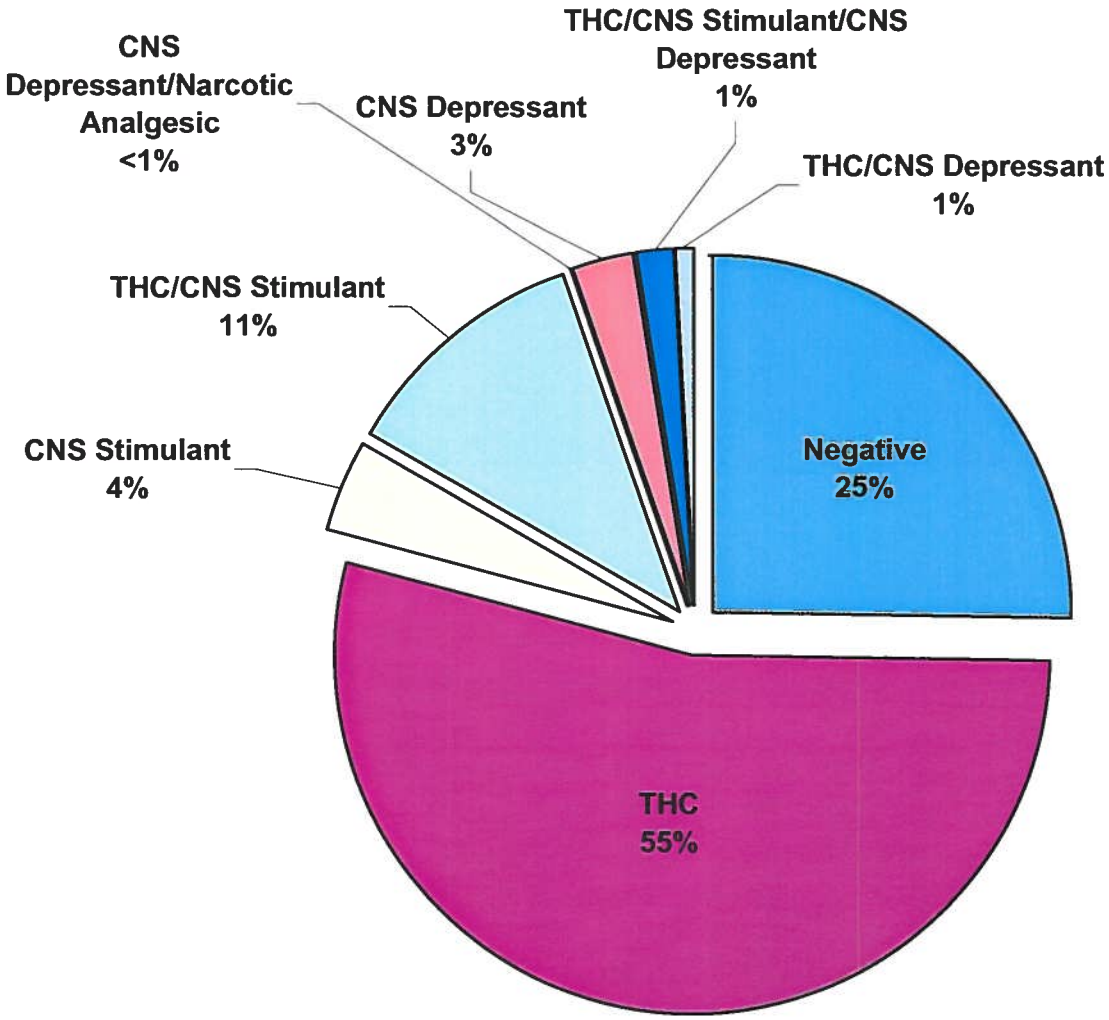

Figure 7: Juvenile Samples Results FY 1999

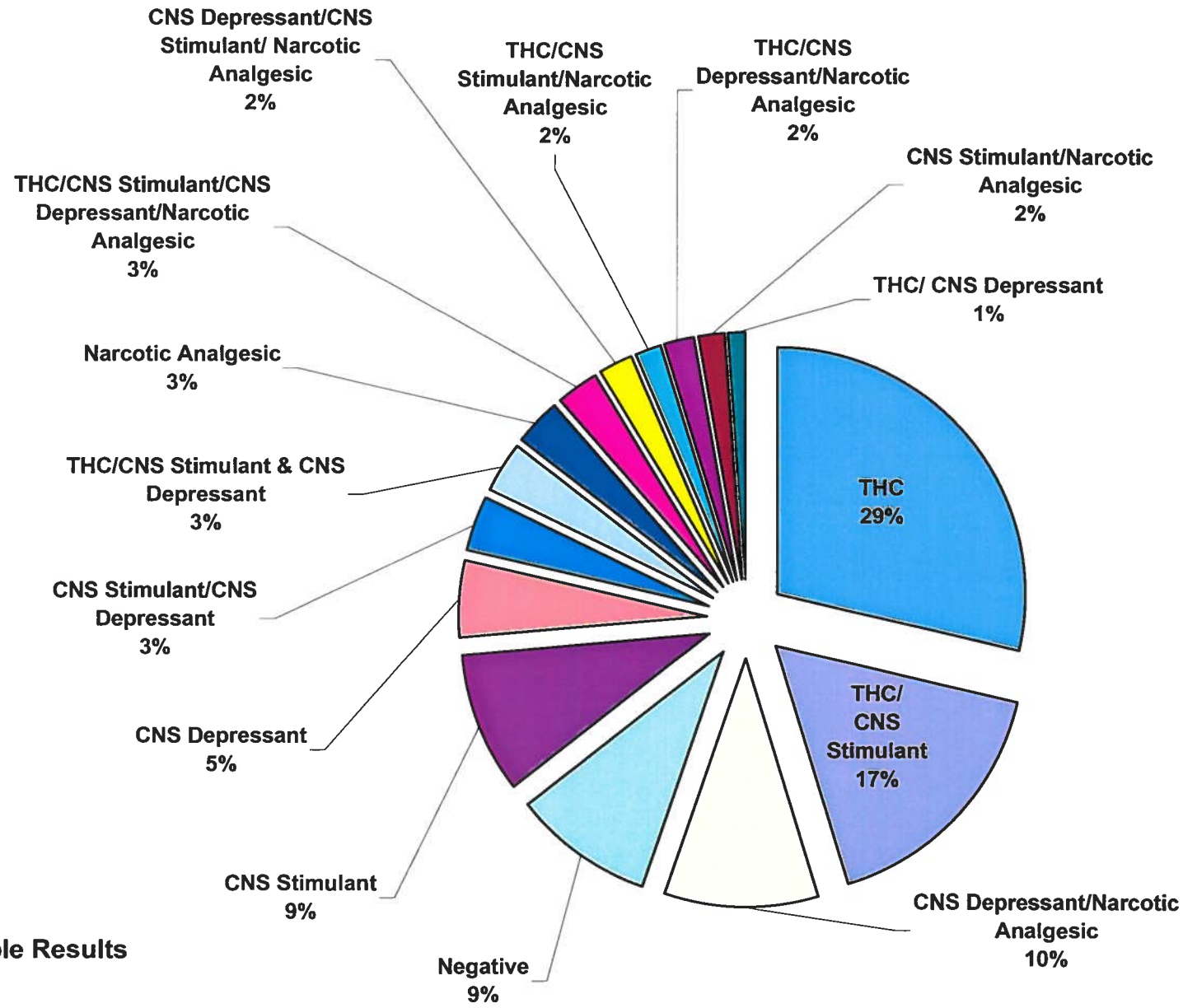

Figure 8: DRE Sample Results FY 2001

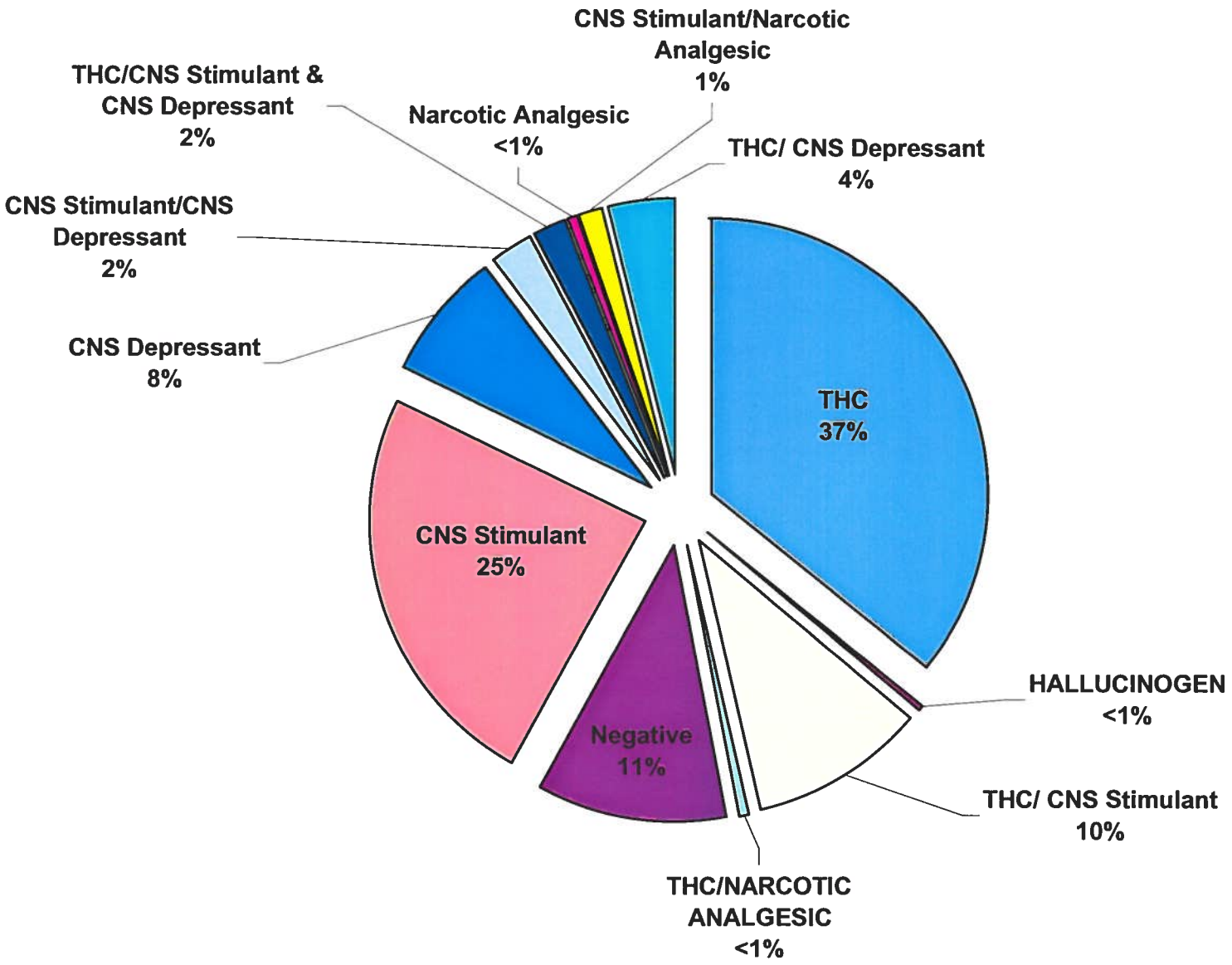

Figure 9 : DRE Sample Results FY 2000

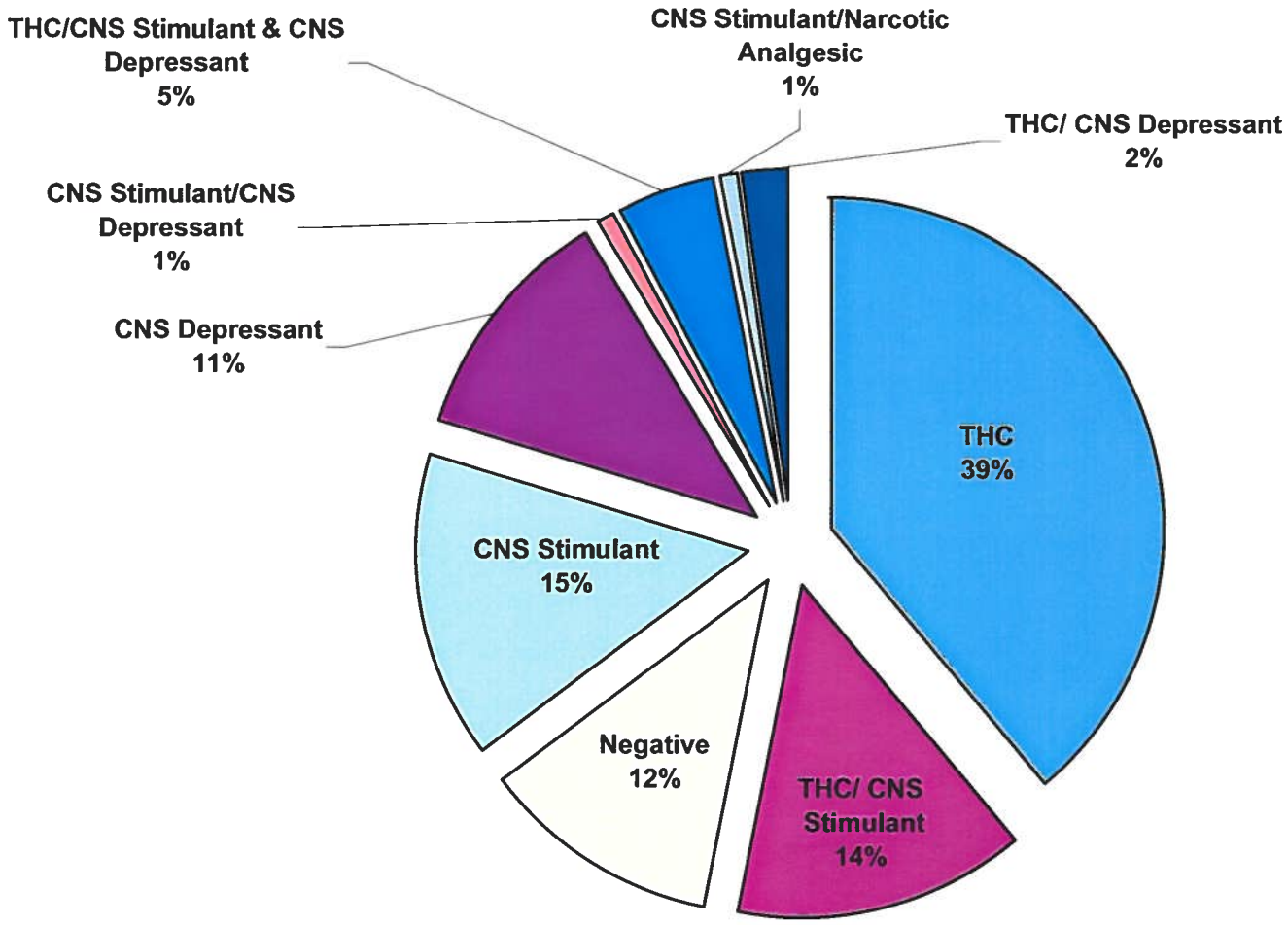

Figure 10 : **DRE Sample Results FY 1999**

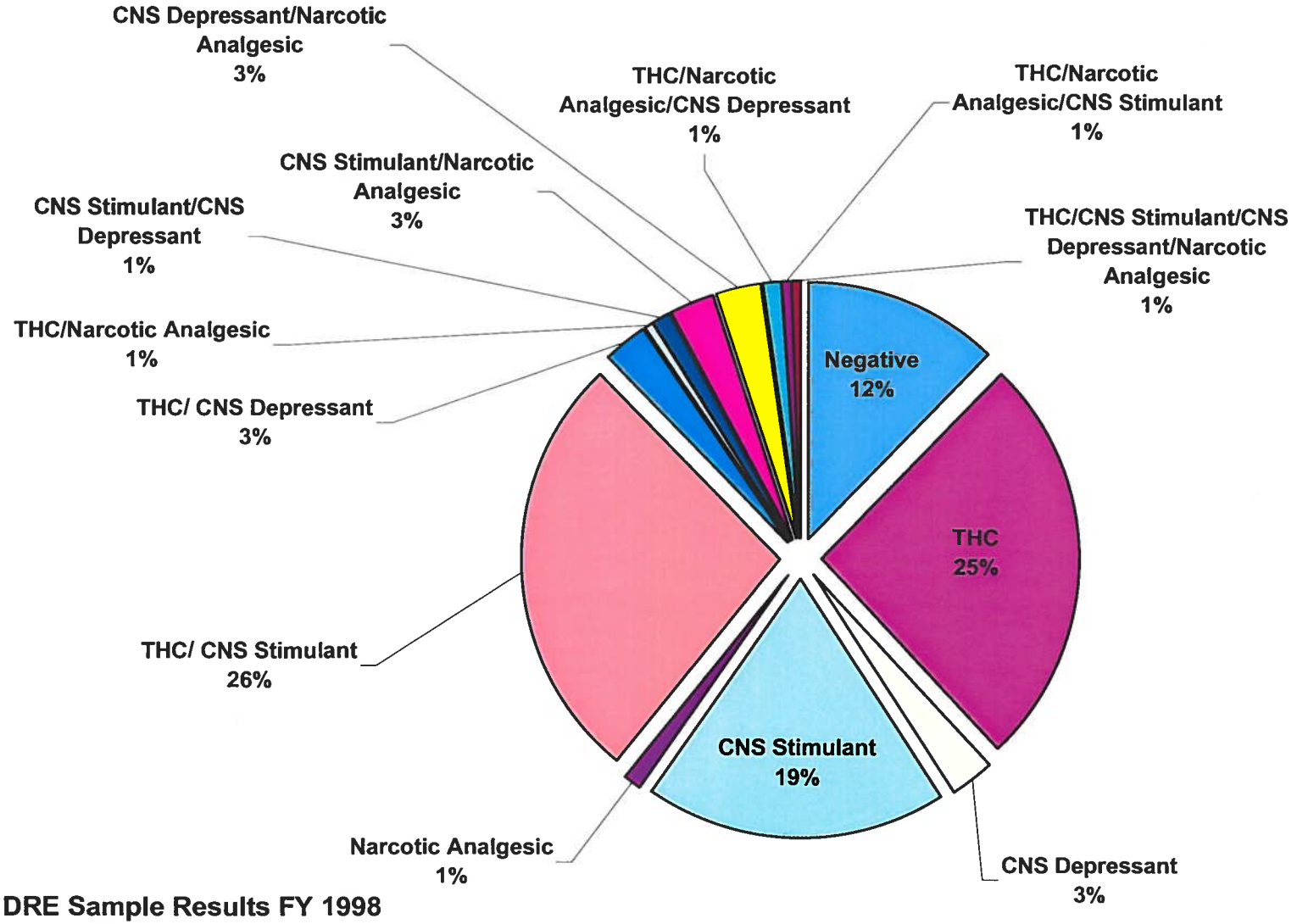

Figure 11 : **DRE Sample Results FY 1998**

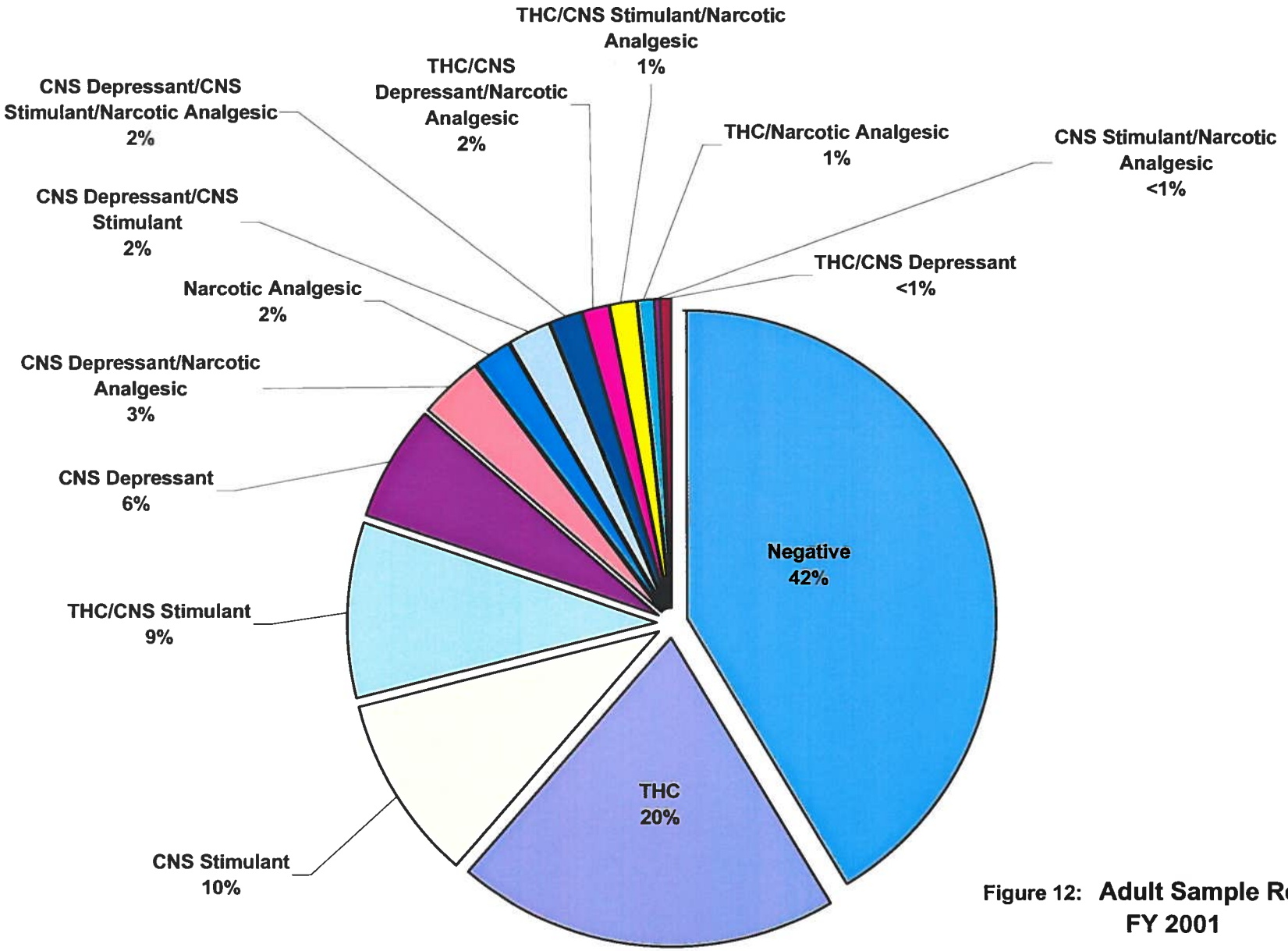

Figure 12: **Adult Sample Results FY 2001**

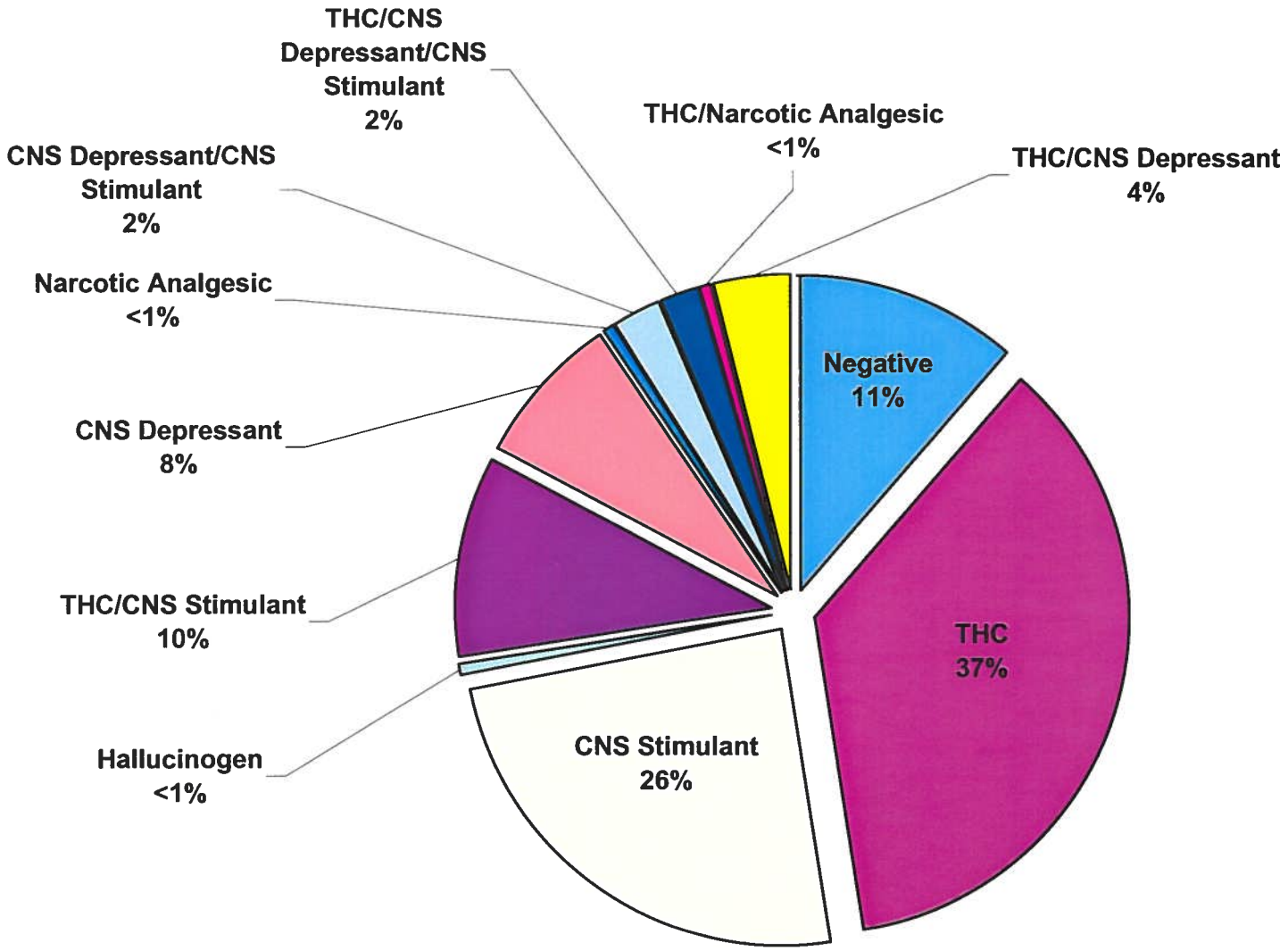

Figure 13 : **Adult Sample Results FY 2000**

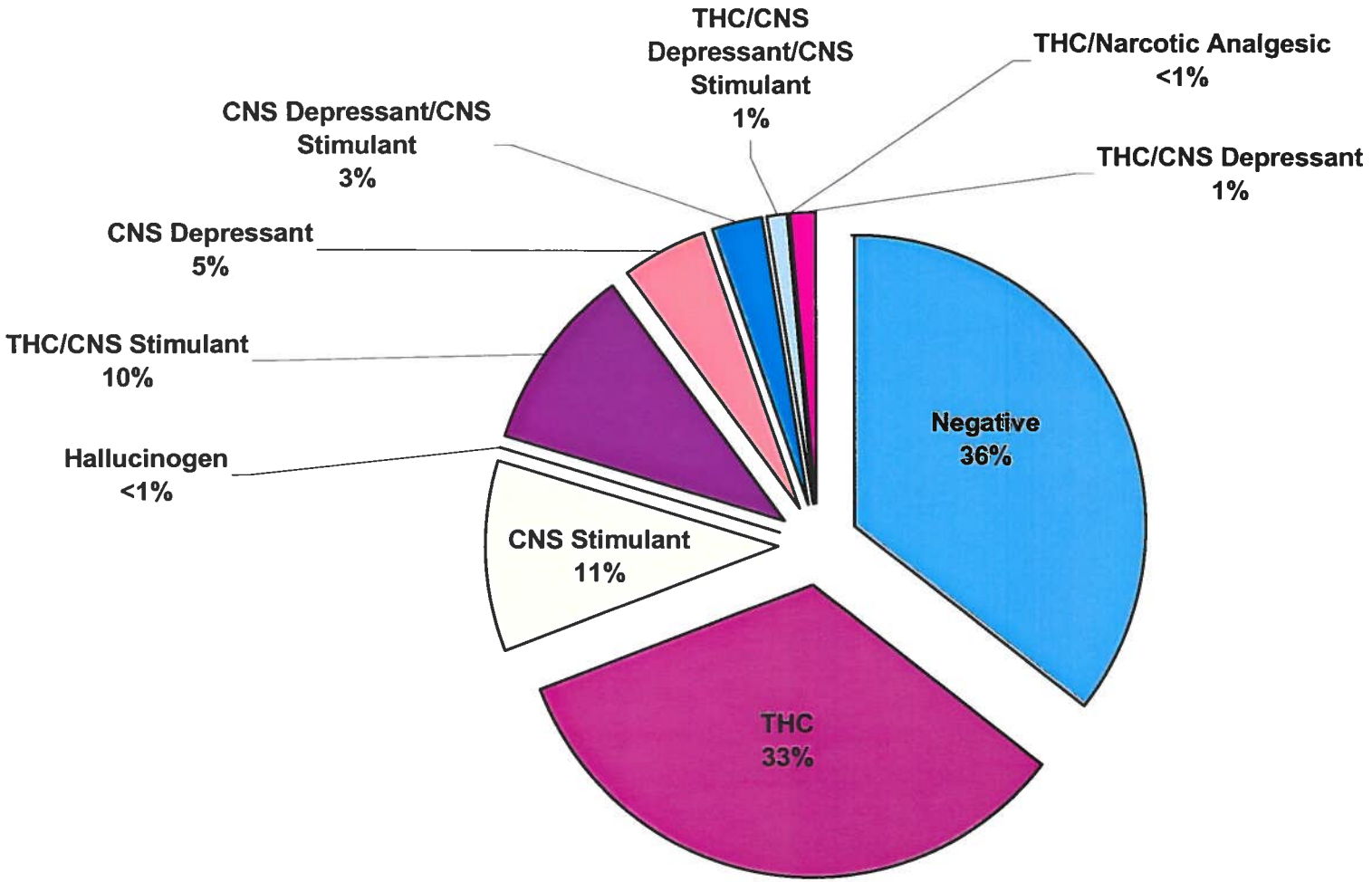

Figure 14 : **Adult Sample Results FY 1999**

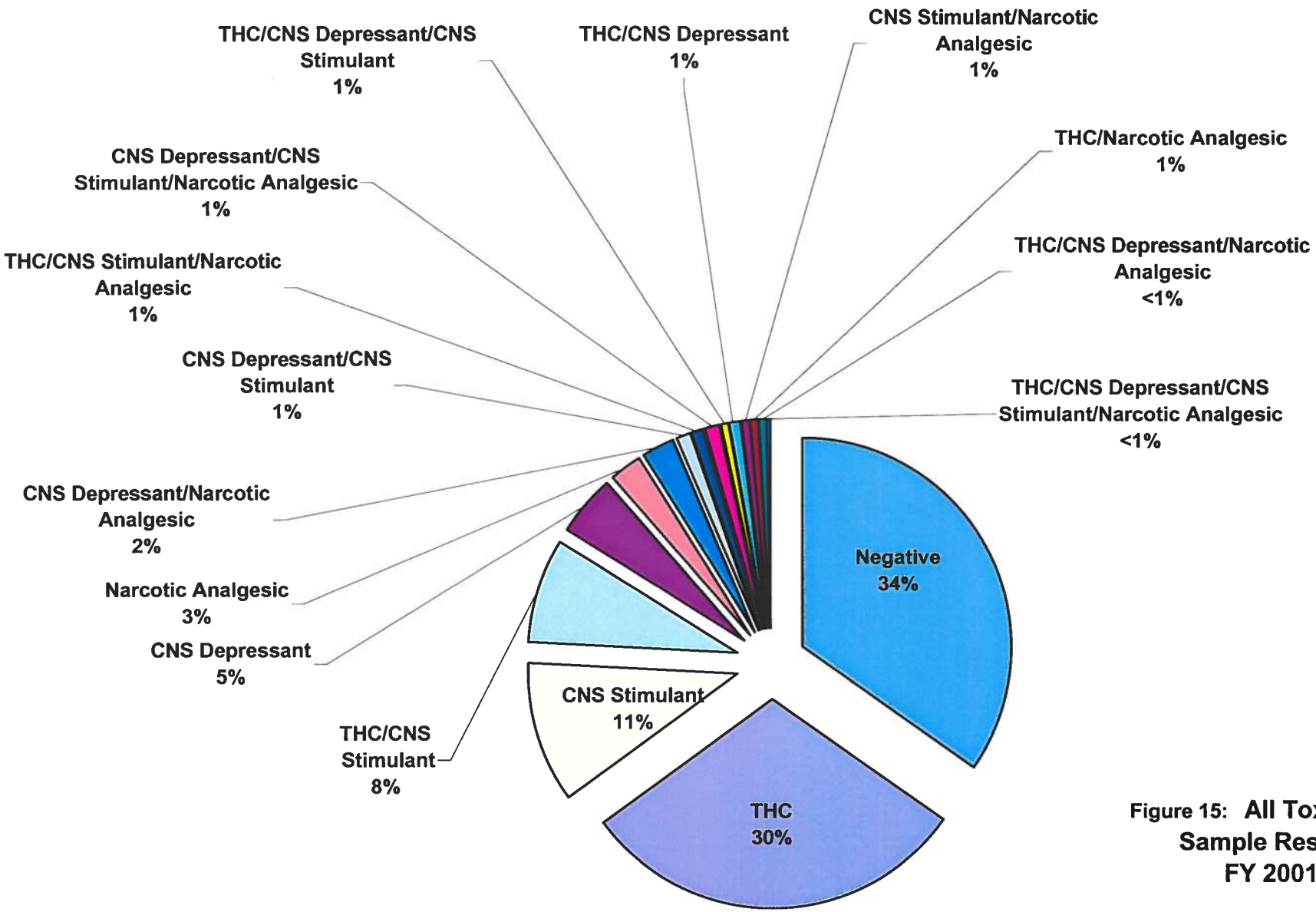

Figure 15: **All Toxicology Sample Results FY 2001**

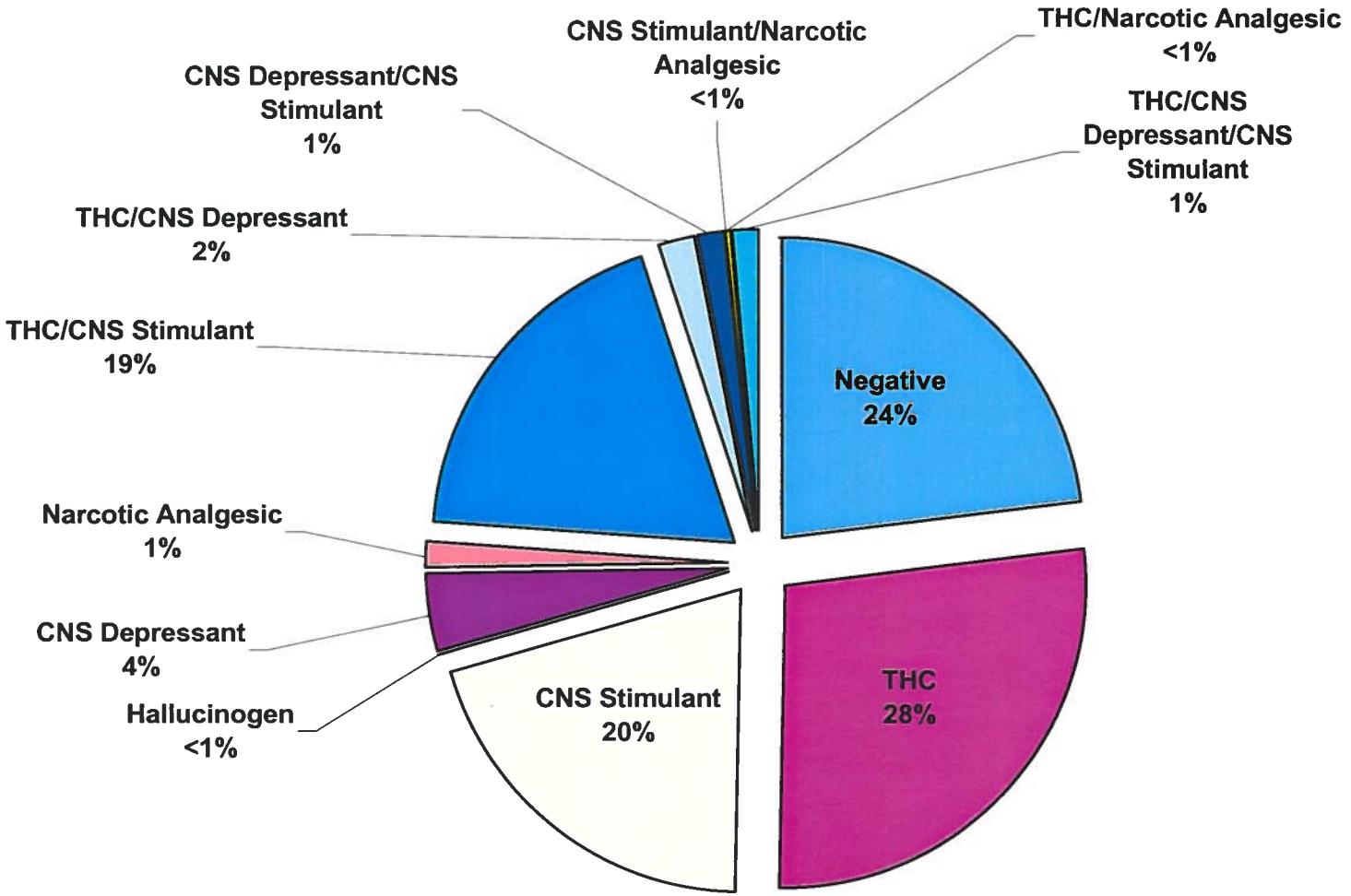

Figure 16: **All Toxicology Sample Results FY 2000**

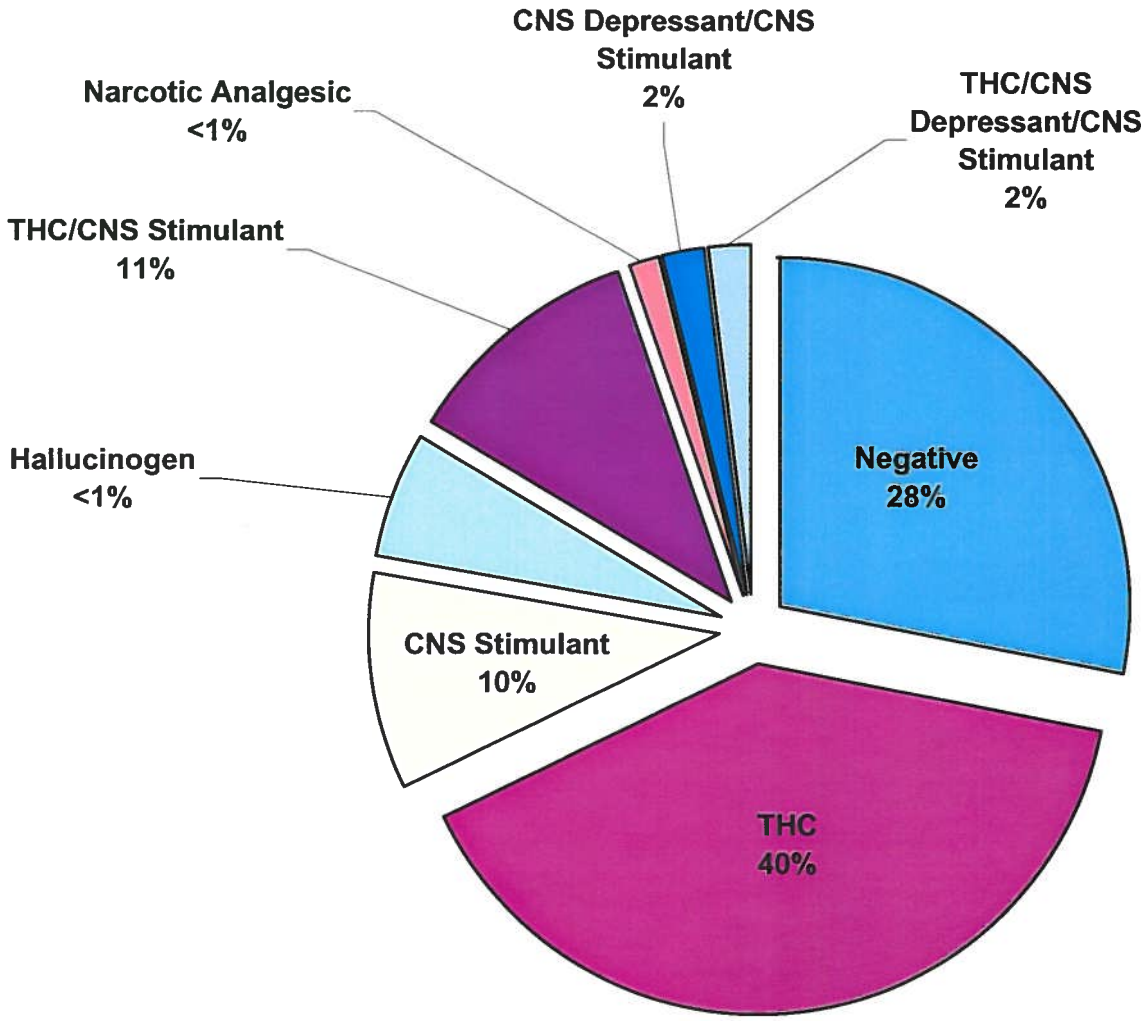

Figure 17: **All Toxicology Sample Results FY 1999**

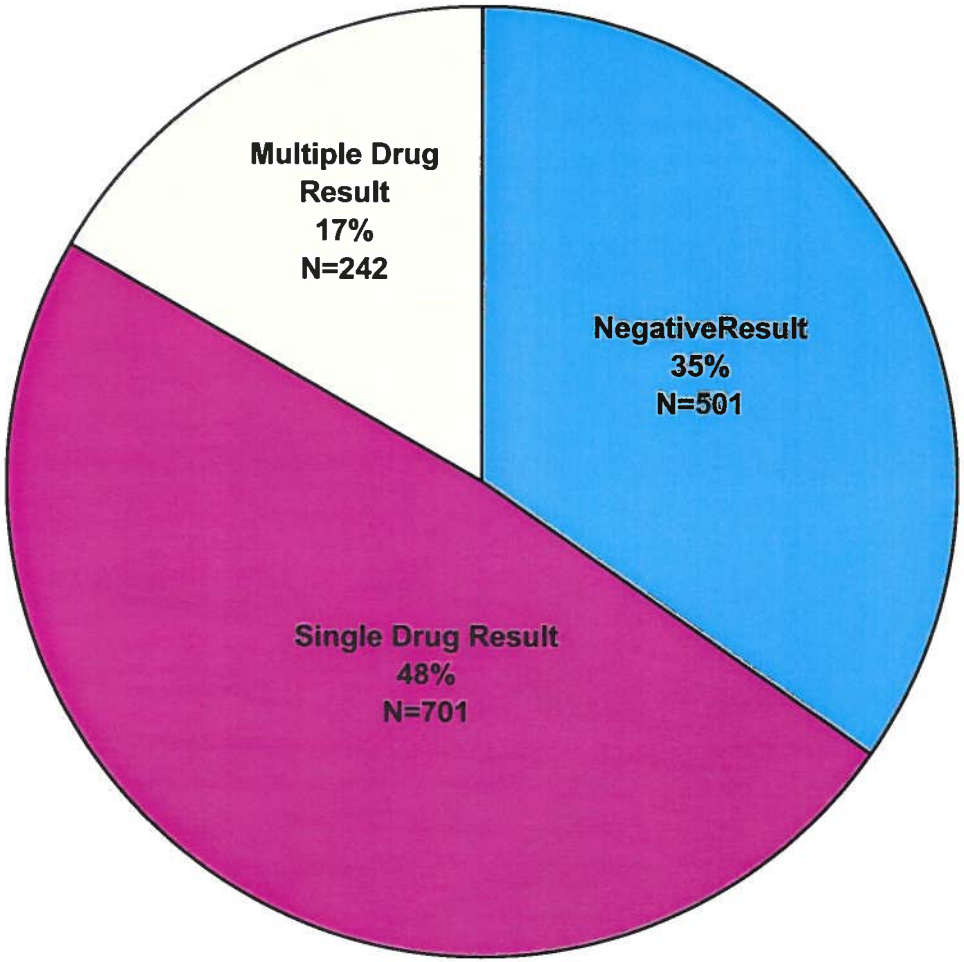

Figure 18: All Toxicology Sample Results FY 2001
N=1444

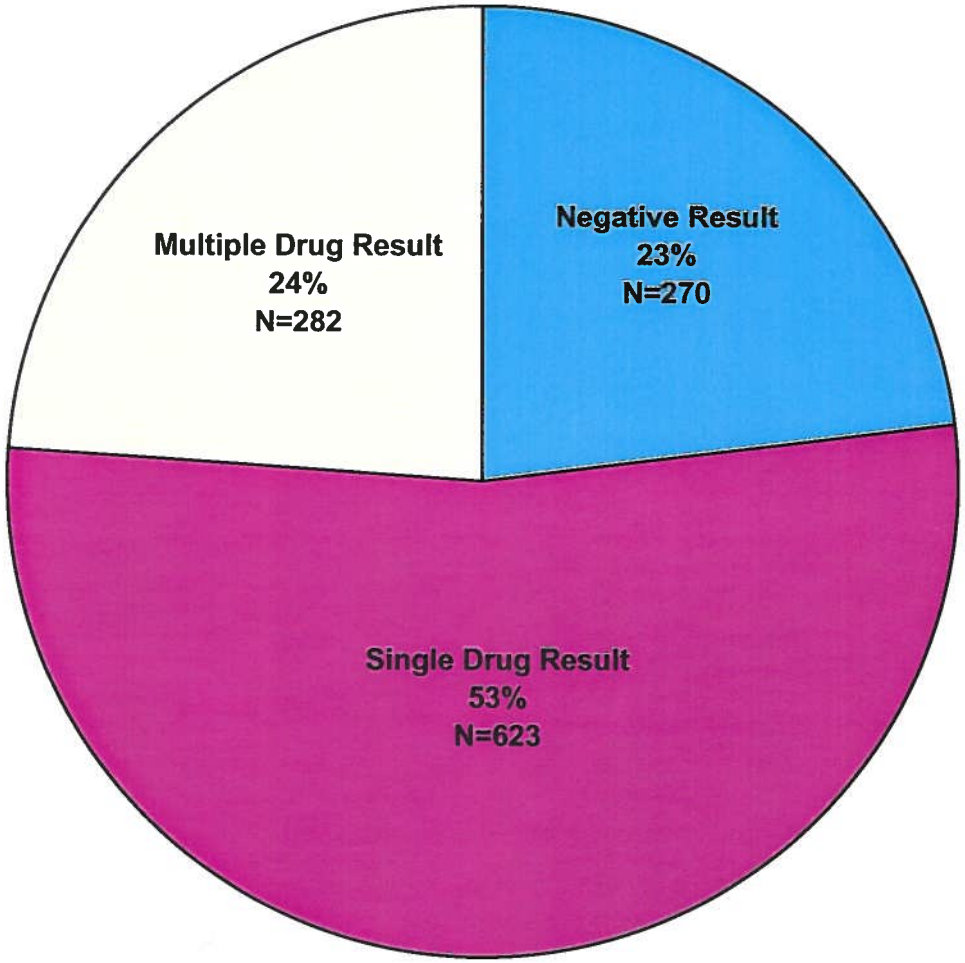

Figure 19: All Toxicology Sample Results FY 2000
N=1175

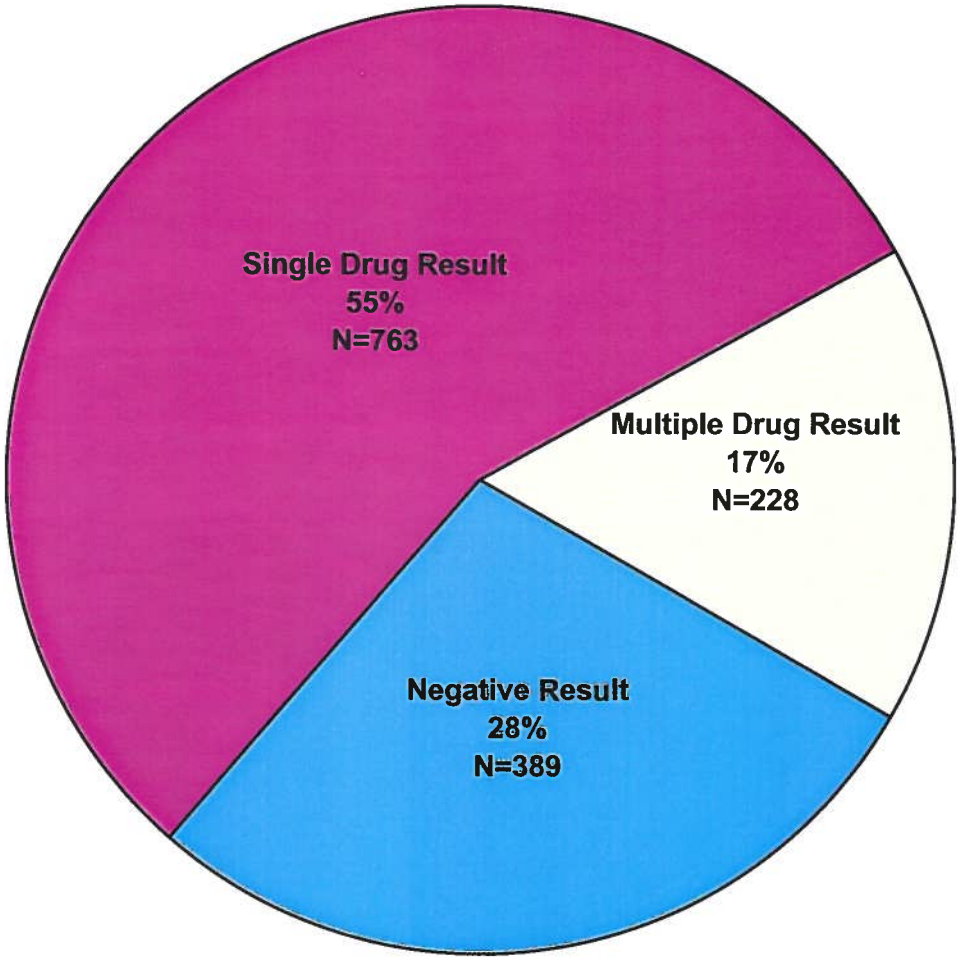

Figure 20: **All Toxicology Sample Results FY 1999**
N=1380